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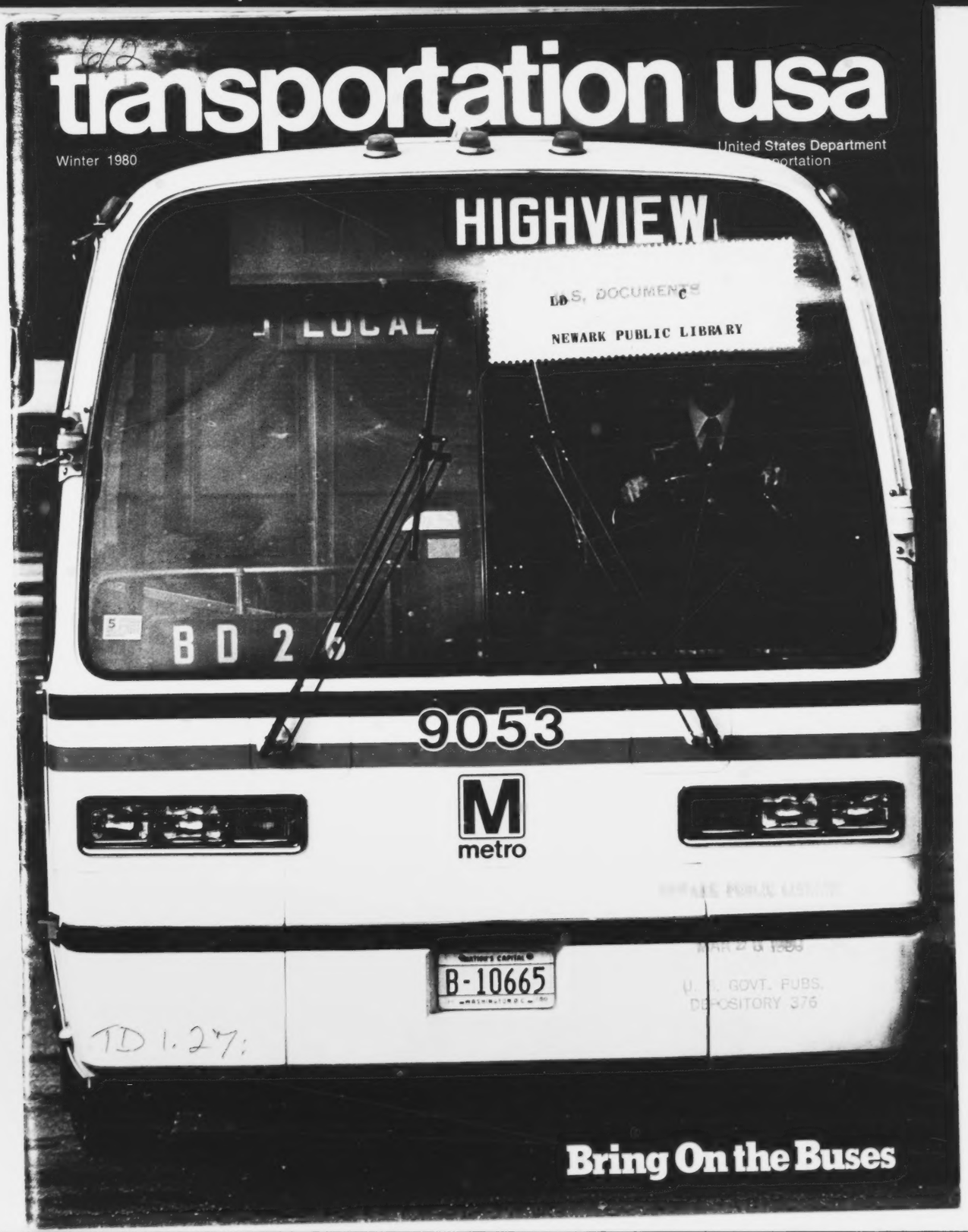

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Bring On the Buses

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Winter 1980

Volume 6
Number 2

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United States Department
of Transportation

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Cover photo by Reggie Mason/WMATA

Inside cover: Beautiful agricultural land surrounds the small town of Moscow, Idaho. See story on Moscow Town Meeting, page 16

Photo by Phil Schofield

Back cover: At the end of March, postal carriers will deliver census questionnaires to about 86 million American households. See story on what we will learn about transportation in this country from the 1980 census, page 10.

Photo courtesy of the Census Bureau

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Bring On the Buses

By Clyde Linsley Jr.

Energy Initiative Would Increase Bus Capacity

Jimm Collin/Uniphoto

Thousands of people took the bus for the first time last year.

In 1979 thousands of Americans took the bus for the first time. A lot of them had to stand.

The great stampede to public transportation, long predicted but often postponed, appears at last to be under way.

And it is under way with a vengeance. *Passenger Transport* magazine reported recently that August 1979 was the twenty-fifth consecutive month of ridership gains for the nation's public transit systems—roughly 50 million more Americans used transit that month than had done so in August 1978.

This is good news, and it is bad news.

It is good news because it can contribute substantially to the nation's attempts to reduce dependence on imported oil. Increasing average bus occupancy from 12 to 36 passengers would save 140,000 barrels of fuel a day. By increasing American transit capacity by 50 percent—and then using that capacity to its fullest extent—we could save an additional 200,000 barrels a day.

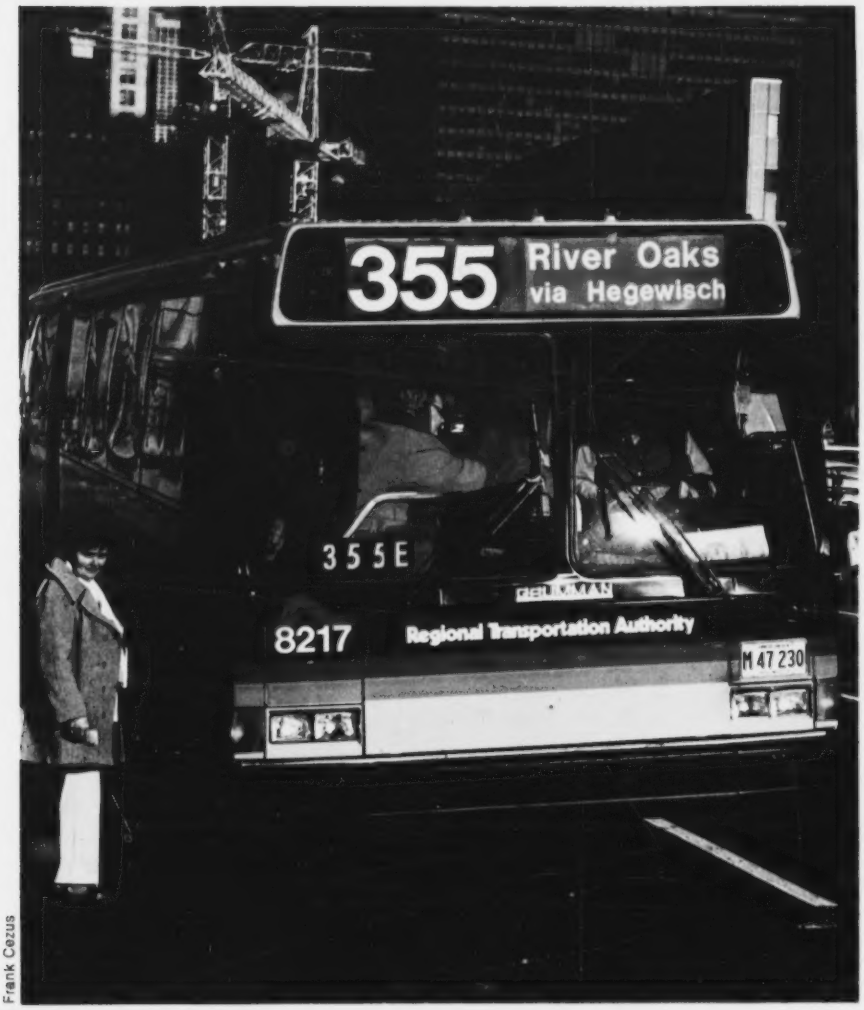
It is bad news because the capacity isn't there—not now, not tomorrow, and, unless we take steps quickly, not for a very long time.

And time is fleeting.

"Transportation accounts for more than one half of our total petroleum use, and the private automobile accounts for more than one third of our total use," says Secretary of Transportation Neil Goldschmidt.

"Clearly, then, a remedy for our energy ills must include both undertaking new initiatives for public transit and getting a handle on our auto habit. The two are inextricably related and connected, and must be approached as such."

The Carter Administration and the Department of Transportation are attempting to deal with these inextricably related problems in a compre-



Frank Cezus

In order to meet the rising demand, the country is going to need more buses—and more drivers.

Judy G. Rolfe/Unphoto

hensive way. That's why the Administration has proposed the $16.5 billion transportation energy initiative, a massive transit, automotive, and traffic management program that will be funded with revenues from the windfall profits tax on oil. (See "The Transportation Energy Initiative" on page 4.)

Over the next decade, the transportation energy initiative will more than triple U. S. investments in public transportation, compared to the decade preceding it. It is a program, Goldschmidt says, that will take public transit on a quantum leap forward, while remaining flexible enough to be tailored to the needs of transit agencies of varying sizes and characteristics around the country.

"It is time transit stepped beyond its limited role of the 70s—that of carrying the excess peak-hour automobile trips," Goldschmidt told members of the American Public Transportation Association recently. "President Carter's transportation initiative is your invitation to make transit a full partner by providing Americans full transportation service, at the neighborhood as well as the regional level. . . .

"If we succeed at this," he said, "then we will have made the most of this transportation initiative, not only to see transit aid in energy security, but also in enhancing the livability of our cities and towns and easing our nation's transition into a workable future."

There are four major components to the proposed transportation energy initiative. Largest of them is the $13 billion ten-year public transportation investment program.

Of this sum, $5.6 billion would be used for buses and bus-related facilities—to buy new buses, renovate old ones, improve service reliability, make buses more attractive and convenient, take advantage of new methods of operating and marketing, and start new systems. The program is expected to add about 3,000 new buses a year to the nation's fleet and, by 1990, to increase capacity by up to 10 million

The Transportation Energy Initiative

D. R. Thompson

"Just for the routine home-to-work commuter trip, Americans use 1.8 million barrels of fuel each day," Secretary of Transportation Neil Goldschmidt points out. "And roughly 1.4 million of those barrels are burned by commuters driving back and forth each day alone."

Clearly, any improvement in the way we commute to and from work, and in the ways in which we use our cars, is a step toward greater energy independence. If implemented, the President's transportation energy initiative will have positive effects that go beyond additions to the nation's bus capacity.

The program earmarks about $8.6 billion for rail improvements—$5.7 billion for modernization and extension of existing systems and about $900 million for completion of new systems.

An additional $800 million would be provided to speed up the process of funding Interstate substitution projects. These funds would come from the proposed energy initiative and would augment the limited general revenues now available for Interstate substitutions. Demand for substitution money is expected to increase as the 1986 deadline for Interstate withdrawals approaches.

There are three more components of the President's proposal: a $2.5 billion auto-use management program, a $200 million program to evaluate existing technology for improving gas mileage, and an $800 million program of basic research aimed at producing long-term improvements in automobile technology.

The auto-use management program is particularly important because, in most areas, the automobile is an important element of the transportation system.

Cities like Los Angeles, Houston, and Phoenix—cities that grew up with the automobile—are laced with extensive urban freeway networks. While these freeway systems speed up the process of getting from one place to another, they also foster our dependence on the car.

This dependence on the automobile is hard to overestimate. It accounts for 90 percent of all our personal travel, and for 34 percent of all the petroleum we use.

Nearly half of all the trips on public transit in the entire nation are made in the New York metropolitan area, so the private automobile probably couldn't be eliminated from our cities, even if we wanted to do so.

The auto-use management program would improve automotive efficiency by changing the way we use our cars. Program funds would promote the use of carpools, vanpools, ridesharing, and other such techniques, not only for rush hour commuting but for shopping and recreational trips as well. Alternatives to the car—such as bicycles and walking—would be encouraged through the development of bike lanes, secure bicycle parking facilities, and improved walkways. The program would also improve enforcement of the 55 mph speed limit, add fuel economy checks to existing vehicle inspection programs, and help to inform the public about fuel economy.

Although seemingly small, such improvements could have a major impact on our energy difficulties when combined with other actions. For example: By doubling the number of commuters now using carpools and vanpools, we could save an additional 200,000 barrels of oil a day by 1990.

Another example: a recent survey of commuters in 20 metropolitan areas found that five percent walked to work. Improvements in pedestrian facilities could easily increase that figure by one or two percent—and remove still more cars from the urban traffic jam.

Buses equipped with special lifts are accessible to people in wheelchairs.

passengers per day.

Buses are often the underrated stepchildren of public transit advocates, who tend to think more in terms of high-capacity rail systems. Buses deserve more serious consideration than that.

"In more than 90 percent of American communities, from the small towns of the Northeast to the largest cities of the Midwest, mass transit means buses," Goldschmidt points out. "Even in those cities that have heavy or light rail systems, buses still play a major role in feeding and augmenting the rail lines."

Ironically, while increasing the capacity of America's bus systems is sound public policy, its implementation could be difficult. In a recent speech, Goldschmidt pointed out the steps that must be taken in order to follow through on the opportunity to increase bus capacity presented by the transportation energy initiative.

The Bus: Transportation's Workhorse

Taxis, paratransit vans, even private cars will be a part of the urban transit system during the next ten years, as the transit capacity crunch grows more severe. But the mainstay will be the bus.

"The bus will continue to be the workhorse of the transit environment. It has to be," says Lillian Liburdi, Deputy Administrator of the Urban Mass Transportation Administration.

"We have never said that the car is going to disappear. It's not. But we should think of it as a supplemental way for many kinds of trips rather than as a primary means of travel," she says.

Buses will play a major role in supplying the substantially increased transit capacity to be created as a result of the President's proposed transportation energy initiative.

Gearing up for such a capacity increase will be a crash project, not only for the bus manufacturing industries but also for the government, which must provide a major portion of the funding. A major problem, which must be resolved in the near future, is the question of what these new buses will be.

A previous attempt by DOT to define the bus of the future—the so-called Transbus project—ran into difficulties in mid-1979 when not a single bus manufacturer submitted a bid to build the vehicle. Incoming Secretary of Transportation Neil Goldschmidt promised that the decision to go ahead with the Transbus design would be reviewed carefully in light of the failure of manufacturers to want to build it.

"We're also questioning in our own minds what the federal role should be in the whole bus program," says Liburdi. "Is it just to provide assistance through the financial resources we have? Is it to participate in developing specifications? Is it to okay specifications developed by the manufacturers and the operators? We're discussing those questions, and we'll probably make some decisions soon. We don't think we have a lot of time."

Is it possible that time has already run out?

"We believe that if the Congress takes specific action, even as late as July, on the energy initiative and the authorization for transit-related purposes, our grantees could use those resources this fiscal year," Liburdi says. "That doesn't mean necessarily that we'll have vehicles on hand within the same fiscal year, but we're looking at ways to shorten the process time.

"Even though we may not have those new buses on the streets this year, we think it's a very good start toward seeing them on the streets next year."

Keeping as many buses as possible in good condition is one way to help meet the demand for more mass transit.

In order to provide the 3,000 additional buses proposed each year in this decade, he said, we must find a way out of the "bus procurement hassle." Production capacity must be increased, bus delivery time must be reduced, competition must be increased, and bus standards must be re-evaluated to ensure that they don't hamper new entries into the bus manufacturing business, or unduly limit the nation's ability to meet its goals.

As one step in that direction, Goldschmidt proposed creation of a 1,000-bus "strategic bus reserve," using some of the transportation initiative funds. By guaranteeing orders for a certain number of transit buses, the government would encourage manufacturers—and potential manufacturers—to increase their production capacity in order to meet the added demand in a reasonable time.

However, Goldschmidt said he sees the bus reserve as a one-time, or at least short-term, proposition and "not as a lifetime thing."

Another problem faces the nation as it attempts to deal with the pressing capacity crisis: the problems of accessibility. An estimated 10.4 million elderly and handicapped Americans

Frank Cezus

are dependent on public transportation for their mobility, and this is by no means the full extent of the problem. Many more of the elderly and handicapped, who have other transportation options available to them, might make greater use of public transit if it were made more easily accessible.

The Department of Transportation has been working to increase transportation access for the elderly and handicapped since 1970, but in 1973 this effort became mandatory. Section 504 of the Rehabilitation Act of 1973 made accessibility a requirement for any transportation program receiving federal assistance.

Various means of providing that sort of transportation accessibility have been tried by local transit agencies—buses equipped with special wheelchair lifts and specially-built vans, taxis, and minibuses among them—but Transbus was to be the ultimate response.

Transbus was a standardized full-size transit bus capable of kneeling at curbside to make the step up into the interior of the bus easier to negotiate. It came equipped also with lifts and with wide aisles capable of

accommodating wheelchairs.

Unfortunately, the bus was widely criticized as impractical within the transit industry. Technological problems appeared in early prototypes and production models, and when it came time for bids from potential manufacturers, none could be found.

Secretary Goldschmidt is now reviewing the whole area of bus manufacturing as it affects both the needs of the handicapped and the need to get more buses onto America's streets.

Goldschmidt summed up his thoughts on buses at the time of his confirmation: "Insofar as transit is concerned, I believe we must rely for the most part on buses—which means stressing both the availability of equipment and the efficient operation of that equipment—and that we must seek the most return on our transit investment. We must be sure we are putting the right system in the proper community."

Clyde Linsley is on the staff of the Department of Transportation's Office of Public Affairs.

Pittsburgh's South Busway

The big advantage of buses over other forms of public transit is maneuverability and flexibility. A bus can stop at every corner along its route, providing almost door-to-door service, and it can deviate from the route when necessary.

The big disadvantage of buses, of course, is their lack of speed. Buses mix with the regular traffic and get bogged down in the urban traffic jam like everybody else.

Pittsburgh has found a way around that disadvantage without giving up the advantages.

In town, buses operated by the Port Authority of Allegheny County operate on city streets like other traffic. But southbound buses take advantage of a four-and-a-half-mile highway built just for buses and trolleys.

After crossing the Smithfield Street Bridge, PAT (for Port Authority Transit) buses enter their own exclusive tunnel. Three minutes later, they come out of the 3,800-foot tunnel and enter the busway, which sweeps them past the 140,000 vehicles that clog the regular traffic arteries out of town.

Ten minutes later, they leave the busway and follow their regular routes through Pittsburgh's southern suburbs.

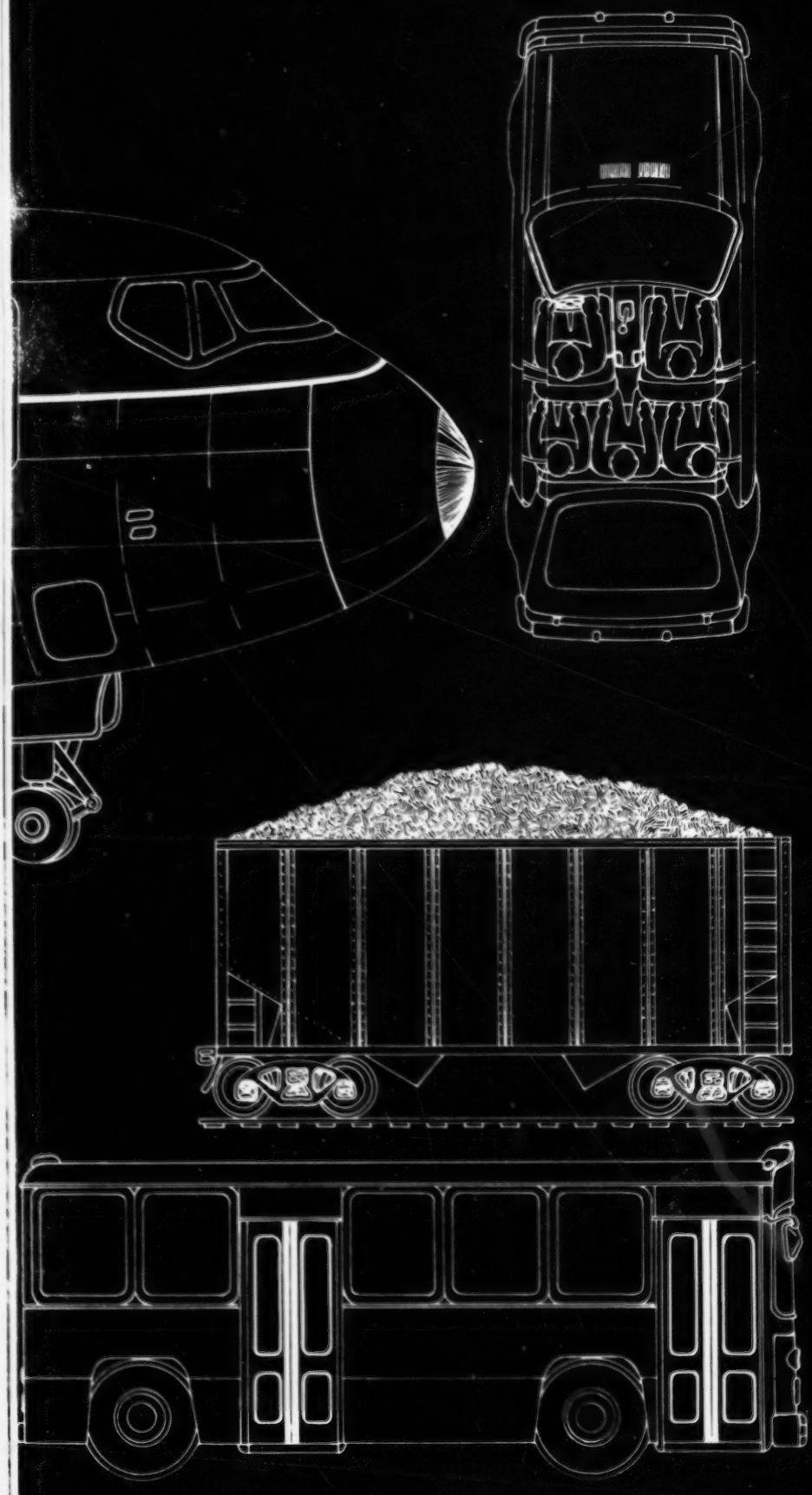
The busway is open 24 hours a day. About 25 bus routes travel the busway, and during rush hours, more than 160 PAT buses can be moved through what would otherwise be a major traffic bottleneck.

Buses enter and leave the busway at seven locations, and eight sheltered bus stops have been placed along the route to accommodate walk-on passengers and riders transferring from feeder routes.

Dick Swan

PAT estimates that busway ridership is saving the area about 4.5 million gallons of gasoline every year, and ridership is increasing. A PAT spokesperson estimates that ridership has gone up 30 to 50 percent in the two years the busway has been open for traffic.

Ground was broken in 1978 for construction of a second busway—this one designed to serve the city's eastern suburbs. The east busway will open in 1982.



A Plan for the New Year

By Secretary Neil Goldschmidt

The start of a new year is traditionally a time to evaluate past efforts and set new directions. This is no less true for Departments like ours than for individuals or families.

As is usually the case with such an exercise, what emerges is not so much a set of new programs or new initiatives as a recognition of the need to rededicate our efforts to the activities already underway. When we make a list of New Year's resolutions, they generally resemble last year's set. The calendar may have changed, but the rules stay the same.

Here are mine.

- **Eliminate waste**

This rule applies both to the way we do business and to the business we do. By making timely decisions and managing the business of the Department in a cost-conscious fashion, we can reduce waste and increase the efficiency of our operation. Whether the decision affects an airport in Minnesota, a highway in Florida, or a bus purchase in Vermont, we do the people of the country the greatest service by getting the deci-

sion made in a timely and efficient manner.

The same rule is true with regard to the substance of the issues we face in transportation. None is more important to this country than the issue of energy. Today, America is importing nearly 50 percent of its oil at a cost that will soon reach $70 billion. And yet we waste virtually half of the energy we use.

A lot of that waste comes in transportation. Roughly 1.4 million barrels of gasoline, for example, are burned each day by commuters who drive back and forth alone.

Our national interests will not allow this kind of wastefulness to continue. The President's transportation energy initiative can go a long way toward reducing this waste. For example, just doubling the number of commuters using carpools and vans will save 200,000 barrels of oil per day. Additional auto-related savings will come from enforcement of the 55 mph speed limit, from highway projects that encourage energy efficiency in the operation of autos, and from investments in energy-conserving auto technology.

In addition to these programs, there is the major initiative in the area of public transportation. Here we will take a quantum leap in the nation's transit systems, adding capacity for an additional 15 million passengers per day over the next ten years. The combination of the auto and transit programs will result in our saving at least 350,000 barrels of oil per day by 1990.

• Preserve existing investments

When we spend the public's money on transportation investments, we should make sure that we get the most out of those investments. In particular, it is just common sense to take care of capital investments, to maintain and repair them for the longest life possible. In 1980, we will have to improve our record in this regard with both highways and transit.

Our highway system, for example, represents a $1 trillion capital investment, perhaps the most valuable investment owned by the American people. But we have not been doing an adequate job of preserving that system to get the longest useful life out of the dollars already spent. To do that, we must develop a way to finance the repair and maintenance of our highway system. This is an effort we will begin this year.

Our transit systems deserve the same consideration. The buses we fund should be maintained with an eye to extending their useful life. And we need to provide incentives to transit agencies to hold on to their older buses for emergency use, giving us the capacity to respond instantly to a mobility crisis that could arise in the future because of the interruption of foreign oil supplies.

• Make solutions solve more than one problem

In an era of declining resources and increasing costs, this rule represents our multiplier. By linking together issues that are related, we are able to build strategies rather than relying on one-dimensional programs.

For example, this thinking underlies the importance that we attach to rail reform and our commitment to producing a healthy rail industry.

The fact is that a healthy rail industry is basic to the economic health of this country. Clearly, railroads are relied on by shippers to carry a wide variety of commodities to market. But it's also important to consider the role railroads will play in the future in carrying the increasingly large volumes of coal that will be needed as we move from dependence on imported oil to dependence on domestic energy sources. Moreover, railroads will be called upon to carry increasingly large volumes of grain—our number one commodity in producing a more favorable balance of payments for this country and thereby stabilizing the dollar. A healthy railroad system will save energy, produce energy, and save money—solving more than one problem with one solution.

The same could be said about our efforts to solve problems surrounding the numerous disputed segments of the Interstate system. Many of these segments are located in urban areas and are viewed as a troublesome source of conflict. Our job at the Department is to view them as opportunities to see if we can use the process of resolving these controversial segments to produce a multiple benefit to the cities involved.

For example, I believe we should strive to make these decisions in a way that will allow local communities to link together transportation investments with community housing goals, economic development plans, energy conservation strategies, environmental quality objectives, and more.

We can turn urban deadlocks into urban opportunities.

• Pay attention to things that matter

Just as our list of rules tends to be constant, so does the list of values that we hold dear. Good work, a clean environment, good health, a good neighborhood and community—these are the things that have historically been our values and that we continue to strive for.

Our decisions at the Department of Transportation must continually be held up against these standards. For unless they serve these values, in reality they do not serve at all. So it is that we continue to pay attention to the question of noise at airports and recognize the economic significance of our waterways. We pay increasing attention to the sensitivity of the design of transportation projects as they relate to the nation's cities and make sure that rural areas have the transportation links they need to maintain mobility.

And at the forefront of any consideration is the down-to-earth realization that transportation must serve people—people of all ages, all conditions, and all places.

As America moves into this new decade, transportation will continue to shape and define our way of life. In the year ahead, we can look forward to responding to the growing awareness of transportation's importance to the people of this nation. Each agency and each mode has a contribution to make in improving the quality of life in this country.

That, finally, is the agenda of all of us in the Department.

The 1980 Census

Questionnaires Will Gather Transportation Information

By Bryant Robey

Running may be in fashion, but few people jog to the office. Most of us still begin each work day sitting in a car. Fully 85 percent of American workers drive to work, 65 percent alone and 20 percent in carpools.

Census Bureau statistics show that of this country's 80 million workers, only 6 percent use public transportation to get to work. Another 5 percent walk, and 3 percent work at home, most of those on farms.

What can the U.S. Department of Transportation, local transportation planners, and employers do to lure commuters out of the rush-hour isolation of their automobiles and into public transit? The 1980 census should provide some answers by giving us accurate, detailed, current information on commuting in all areas of the country.

The most recent Census Bureau national commuting survey, from which the statistics cited above are taken, was published last summer.[1]

[1] *The Journey to Work in the United States: 1975*, Current Population Reports, Special Studies P-23, No. 99; $1.75 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Census Bureau

The 1980 census will tell transportation planners how Americans get to work—and what changes in commuting patterns need to be made.

But it is nowhere near as fresh as last year's headlines about fuel-short, angry commuters. The survey, part of the Census Bureau Annual Housing Survey's Travel-to-Work Supplement that was funded by DOT, was conducted in 1975. It was based on interviews with 137,000 persons in all 50 states.

The Census Bureau also surveys selected metropolitan areas each year in a rotating cycle of the country's major urban areas. These surveys are valuable to individual areas included in the study, but the size of the sample is too small to offer useful commuting data below the county level.

Nothing else comes close to what the 1980 census will offer.

Not only will it provide the most comprehensive, cost-effective, and authoritative transportation data since the 1970 census, but its usefulness will also be vastly improved from a decade ago. The journey-to-work questions are among the most expanded areas of the census.

In 1970 there were only three transportation-related questions; in 1980 there are seven. All of them are *on the long census questionnaire that* will be mailed to about 20 percent of the households in the country, selected at random. Because of the sample's enormous size—about 100 times larger than the 1975 transportation survey—it will provide significant information about transportation flows, car ownership, travel time, and other data, which can be combined with demographic characteristics of commuters.

Because the questionnaire is the source of the transportation statistics that will become available after the census, it is worth a close look at each of the transportation-related questions, in order of their appearance:

The first is H28 (the "H" stands for Housing): "How many automobiles are kept at home for use by members of your household?" This question is similar to one asked in the 1970 census. From data on car sales, one can learn that the number of cars in America is increasing, but it takes the census to tell us the demographic details behind the trend. Are there more two- or three-car households than in 1970, or are there simply more single households, each with one car? Are families where both husband and wife work more likely to have two cars than other families?

The next question, H29, is a new one that reflects the growing popularity of vans and trucks during the 1970s. The question is "How many vans or trucks of one-ton capacity or less are kept at home for use by members of your household?"

The first transportation question in the population section is Question 23, which was asked in 1970. Vital to transportation planners, it is "At what location did this person work last week?" The answer requires the respondent to write the street address, name of the municipality, county, state, and ZIP code. This question forms part of the geographic basis for analyzing traffic flows between residence and place of work. The other part, of course, is the person's residential address, information the Census Bureau obtains about every household.

The next question is in effect four separate questions, which together will provide a much better picture than ever before of how people travel to work. Question 24(a) is new, designed to measure the average time in minutes people spend getting to work: "Last week, how long did it usually take this person to get from home to work (one way)?"

This is an important question, because the answers tabulated for census tracts will enable planners to understand people's commuting patterns in terms of time—the aspect that matters most to commuters. These answers could reveal otherwise unseen problems. For example, two neighborhoods might be the same distance from an area's major employer, yet workers from one neighborhood take twice as long to travel to work as those from the other. Armed with this information, a planner would try to understand the reasons for it in order to provide better service—perhaps establishing a new express bus line or changing traffic flows.

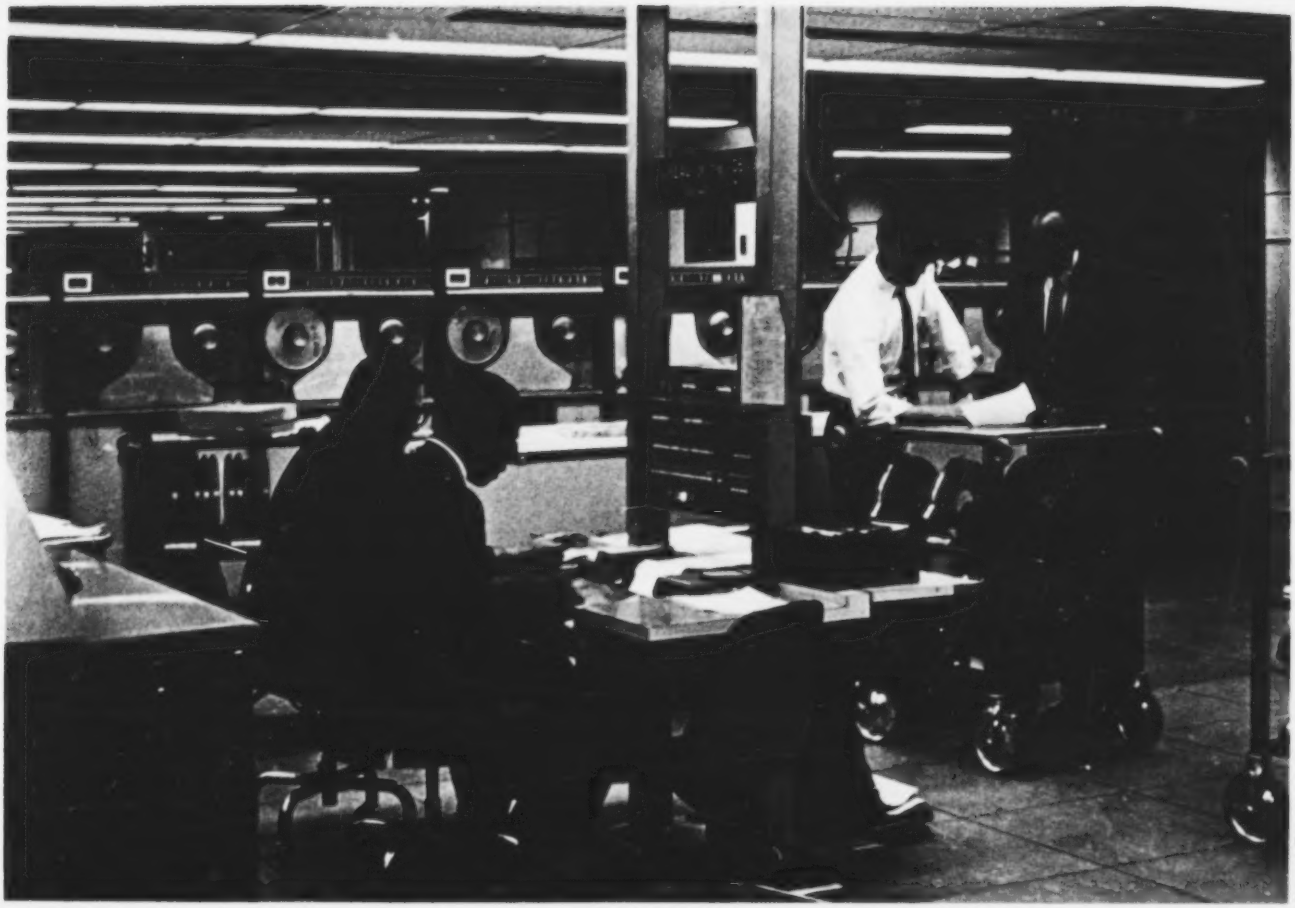
Question 24(b)—"How did this person usually get to work last week?"—is similar to a question asked in 1970, except that the answers now include "truck, van, motorcycle, and bicycle" in addition to the 1970 choices of "car, bus or streetcar, railroad, subway or elevated, taxicab, walked only, or worked at home."

Questions 24(c) and (d) are both new, added to measure the extent of ridesharing. Question 24(c), which is asked only of those people responding "car, truck, or van" to 24(b), asks, "When going to work last week, did this person usually: drive alone, share driving, drive others only, ride as passenger only?" Question 24(d), answered only by those who did not drive alone, asks, "How many people, including this person, usually rode to work in the car, truck, or van last week?" The answers range from two to seven or more.

The census can't tell you everything. For example, unlike the Travel-to-Work Supplement to the Annual Housing Survey, the census doesn't ask those who have changed their mode of travel how satisfied they are with the switch. It doesn't inquire about local travel for shopping, recreation, or other non-work journeys. It won't tell about second jobs or mixed modes of travel—say, automobile and bus. (Some localities are considering taking this kind of supplemental survey at the same time as the census to obtain an even more complete picture.)

The census won't say anything either about long-distance travel. For that information, you must turn to the Census Bureau's 1977 National Travel Survey, part of the Census of Transportation, which is one of the 1977 Economic Censuses.

From the travel survey you can learn such fascinating facts as how many



Census Bureau

The Census Bureau's computers tabulate the millions of pieces of information provided by the questionnaires.

Below, the Census Bureau's 409 temporary district offices across the country are equipped with cardboard furniture.

Census Bureau

billion miles Americans traveled in 1977, apart from commuting (382 billion); how many more trips were made in 1977 than in 1972, the year of the previous travel survey (32 percent more); and what the most popular way was to make long-distance trips (cars, of course, which accounted for 82 percent of all non-local travel, about the same proportion as in 1972).[2]

But the 1980 census will be the only source of detailed data on commuting linked to such demographic and housing statistics as income, education, number of people per household, and occupation, to name a few that are particularly critical to transportation planners.

However, obtaining useful information from the new census will depend on much more than just asking the right questions. The data must be clerically coded to their appropriate piece of census geography (see "A Census Road Map" on page 14). Coding may be a simple concept, but its successful accomplishment involves unerring accuracy and the computer tools to accommodate millions of items.

The Census Bureau's 1980 data tabulations for transportation will be much improved from those in 1970 because of some dramatic steps the bureau is taking to code work location data.

"In 1970 we didn't purchase the Census Bureau's special transportation package because the place-of-work coding was neither accurate enough nor complete enough to be useful to us," says Frank Goodyear, chief of special projects for the D.C. area's Metropolitan Washington Council of Governments. "But the product in 1980 will be far better."

Properly coding work addresses is critical if a correct link is to be made between people's residence and their place of work. Residential address lists are compiled before the census, obtained from mailing firms, door-to-door canvassing, and checks by postal carriers. A computer assigns a code to each address that indicates which census block the address is in. When the data are tabulated, the computer automatically assigns

[2] *Travel During 1977*, National Travel Survey, 1977 Census of Transportation; $7.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

them to the correct census block.

For places of work, however, the Census Bureau relies on the answers provided by each respondent. The bureau's coders must assign each response manually to its appropriate census block. In 1970 the principal tools coders used were address coding guides, the phone book, and maps showing census geography. This was the first time such place-of-work data were gathered for small areas, and coders often were not able to make the proper match when respondents provided incomplete or inaccurate information.

For 1980, by contrast, the Census Bureau has compiled in advance detailed lists of major employers. By the time the answers to Question 23 pour in, the employer addresses will already be coded to their appropriate census block, allowing coders to make correct decisions about the location of work places even if the respondent gives only the name of the employer.

"When coders find an imperfect answer now, they can get help by consulting the lists," says Philip Fulton, the Census Bureau's commuting expert.

After the new census is completed, the Census Bureau and the Department of Transportation plan to make available a special tabulation that will provide a vast amount of valuable transportation data. Since December 1978, the bureau has been reviewing a package proposed by a committee of transportation planners that will be similar to the 1970 Census Urban Transportation Planning Package, but will include information not available before.

Individual metropolitan planning organizations, states, and other interested agencies will be able to order, on a reimbursable basis, the standard set of tabulations containing data for traffic zones of their own choosing. The Census Bureau will provide them with the necessary materials to identify the combinations of census blocks that correspond to traffic zones. The bureau's computers can then gather together data for the appropriate census blocks.

The 1980 census transportation package, as the special tabulation is known, will be very expensive to produce, possibly in the millions of dollars if a package is produced for every metropolitan area in the country, although officials are reluctant to make estimates until the actual cost is known. Presumably, if the cost is unbearably high, the number of tabulations could be reduced.

America Counts

On March 28, postal carriers will deliver census questionnaires to some 86 million American households, the most visible step in an operation that began back in 1974.

About twenty percent of America's households will be mailed a long form that asks many detailed questions. The rest will get a short form that asks seven population questions and 12 housing questions. The long form takes about 45 minutes to fill out, and the short form 15 minutes.

The Census Bureau hires about 265,000 persons to check the returned questionnaires for completeness, to carry out door-to-door work where necessary, and to handle office tasks, working out of 409 temporary census district offices across the country.

After the census questionnaires are checked in the district offices, they go to three centers in Indiana, Louisiana, and California, where they are processed through high-speed microfilming equipment. The data are transmitted electronically to computers at Census Bureau headquarters in Suitland, Maryland, near Washington, D.C. Then, Census Bureau computers start data tabulations.

The first statistics to appear are total population counts by state, which by law must be in the President's hands by the end of 1980. These become the basis for Congressional reapportionment.

By April 1, 1981, states will receive population totals for all counties, cities, and other political subdivisions. These are used to apportion seats in state and local legislatures.

The 1980 census will provide more statistical information about more geographical areas than ever before in our history. Federal, state, county, and city governments will use this information to plan programs, set guidelines, and allocate more than $50 billion each year in federal assistance.

For further information about local offices, census products, and other census matters, contact the Data User Services Division, Bureau of the Census, Washington, D.C. 20233. The telephone number is (301) 763-7720.

If you have specific questions about Census Bureau plans for 1980 concerning transportation or commuting, write Philip Fulton, Population Division, at the Bureau of the Census address or call (301) 763-5226.

The Department of Transportation's liaison to the Census Bureau is James McDonnell, Federal Highway Administration, HHP-24, U.S. Department of Transportation, 400 7th Street SW, Washington, D.C. 20590; (202) 426-0150.

Metropolitan planning organizations would be wise to begin planning now to use the package, advises James McDonnell of DOT's Federal Highway Administration. He says a lack of preparation limited the usefulness of the 1970 package. Many of these planning organizations could include the cost of purchasing the tabulations in the unified work program they submit to the Department of Transportation, but in order to do so, localities would have to start today thinking about how they would use the data, McDonnell says.

"Planners should be busy right now. A lot of people are going to wake up on April 1, when the census is being taken, and realize they haven't even begun planning how to use it."

Having good data, of course, does not mean our transportation or energy problems will be solved. But the new census will give planners the kind of detailed information that can lead to effective solutions.

This information can form the basis for analyzing many kinds of problems, from encouraging ridesharing and developing rush-hour express lanes to changing zoning laws that prevent low-income groups from living in the areas where they work to subsidizing public transportation to help move the working poor to their jobs.

The 1980 census comes just at the right time. Any earlier, we might not have been sufficiently concerned about our energy problems to build relevant questions into the census questionnaire. But if these problems had come any later, we might have had to wait until 1990 for detailed statistics. For once, a national crisis has coincided with the ability to obtain the most accurate information possible to help solve it.

The 1980 census may not provide instant relief to today's weary commuters, bogged down on rush-hour freeways, their dollars emerging as exhaust fumes. But beginning in late 1981 or 1982, it may have an effect.

Says DOT's McDonnell, "When it comes to the census, we don't look for perfection, but only for information. Then we can start to find new ways of solving our problems."

Bryant Robey is editor of American Demographics *magazine in Ithaca, New York.*

A Census Road Map

Census Bureau

Census geography can be confusing, but understanding it is mostly a matter of mastering organization and terminology. As a general rule, the Census Bureau tabulates a small amount of basic population data for small geographic areas, and a larger amount for larger areas, such as metropolitan areas, states, and the nation as a whole.

The Census Bureau expects to tabulate 1980 census data for the total United States, for each of the 50 states, for the District of Columbia, for four census regions, and for nine census divisions, which are collections of states.

Data will appear for about 3,100 counties and for all metropolitan areas. The building blocks that make up counties are called minor civil divisions (MCDs). There will be data on some 35,000 of these and on about 20,000 "places," a census term that describes cities, towns, villages, or boroughs that may be incorporated or unincorporated.

Standard Metropolitan Statistical Areas, or SMSAs, are large cities and their surrounding suburban areas, linked by social and economic ties. Each census tract within an SMSA contains about 4,000 inhabitants. Within census tracts are census block groups, each containing about 800 people. The foundation is the census block, roughly the same as a city block, of which there are about 2.5 million, with an average population of about 100.

Data from the 1980 census also will be available for other commonly used slices of geography, such as ZIP codes, Congressional districts, election districts, and neighborhoods.

Where detailed data are needed for small areas, special data tabulations can be compiled.

DOT news briefs

Coast Guard Will Monitor Curtailed Soviet Fishing Within U.S. 200-Mile Limit

When the United States expanded its fisheries jurisdiction in 1977 to 200 miles, the United States Coast Guard knew it would have its hands full. Patrolling the area and managing foreign catches in our fishing grounds would require new manpower, new equipment, and increased dedication.

But the Coast Guard did the job that was asked of it. In the process of expanding its patrol of America's offshore fishing grounds, the service gained some experience that will serve it well in the next few months.

Early in January, Secretary of Transportation Neil Goldschmidt took a step that depends heavily on the Coast Guard for its effectiveness: in the wake of the Soviet invasion of Afghanistan, Goldschmidt outlined actions the United States would take to sharply curtail Soviet fishing in U.S. waters.

As a further step, Goldschmidt said the Coast Guard would send ships and aircraft to patrol the Bering Sea to monitor the Soviet trawlers already operating in that area—about 24.

In taking these actions, Secretary Goldschmidt was following through on a policy announced a few days earlier by President Carter.

"Our actions are not punitive," Goldschmidt said at the January news conference. "But as the President has said, no nation that is committed to world peace can conduct business as usual with the Soviet Union in the face of armed aggression."

The Soviets were permitted to continue catching up to 75,000 metric tons of fish in the Gulf of Alaska, for which they had bought permits prior to the President's announcement.

But the Soviets, who depend heavily on American catches, had anticipated obtaining permits to catch as much as 435,000 metric tons of fish from American waters this year.

The Soviets used to fish in East Coast fishing grounds, such as the 2,000-square-mile Georges Bank area off the coast of New England, in the spring and fall. Because of winter weather, no Soviet fishing was being conducted on the East Coast when the new policy went into effect.

Under the Fishery Conservation and Management Act of 1976, the Coast Guard has the responsibility of patrolling U.S. fishing grounds and punishing violators. The act requires all foreign vessels first to obtain permits for their operations, to fish only in specified areas, and to stay within their prescribed quotas.

The act gives the Coast Guard the authority to board foreign fishing vessels. If a violation is found, the Coast Guard may issue a warning citation or, if the violation is serious enough, a report of violation. Sanctions include civil fines of up to $25,000 per offense, criminal penalties of up to $50,000 in fines and six months in prison, and forfeiture of both the fish caught illegally and the vessel.

A Soviet trawler fishes in U.S. waters.

The Soviet ships working off the Alaskan coast—the source of 80 to 90 percent of the Soviets' American catch each year—would require two to three months to meet their quota of 75,000 metric tons. Four Coast Guard cutters will monitor their activities during that time.

Goldschmidt said the government also was reviewing a number of cooperative ventures with the Soviets on such subjects as aircraft landing systems, railroad technology, and driver safety.

Listening to Small-Town America

Up in northwestern Idaho, surrounded by fields of wheat and forests of white pine, is the small university town of Moscow.

It doesn't have a lot of people—less than 15,000—but it has its share of transportation problems.

It has crops and timber to ship to market, but a major railroad may abandon its lines in that part of Idaho.

It has commuters who have to get to work or to school at the University of Idaho, but it has no areawide transit system.

Moscow is making plans to relieve the congestion in its downtown area, but it has to have help in moving the highway off its Main Street.

Last October, Secretary Goldschmidt went to Moscow to hear about these and other problems firsthand.

Here's a sample of the afternoon's conversations:

Garry Morris, Chairman of the Latah County Commissioners: "The Milwaukee Railroad, as you probably are very much aware, is proposing abandonment of much of its railroad system. There is a small portion of it in Latah County, but the impact on the county is much greater than just that small portion. The commodity backup in Latah County at this time is probably more severe than it's ever been in the history of the county. And I think it would be even worse if the railroads were to be abandoned. . . . .

"We are behind on shipping about two to three months on many of our commodities, and this is really creating an impact economically in all of the producing areas of Idaho. So I would urge you very much to do what you can to consider the continuation of the operation of the railroad system that handles the service and commodities of this area, and all of northern Idaho and eastern Washington."

Sam Scripter, Moscow Councilman: "Let me say that, for the transportation committee of the Moscow City Council, we do support the development of sensible transportation options for people. Moscow is served now by private taxi and by a senior citizens' bus, but there is no public transportation operating from 6 p.m. Friday through 7 a.m. Sunday. Approximately 750 commuters travel the ten miles between the two university cities of Moscow, Idaho, and Pullman, Washington, yet there is no commuter bus service. Another 1,650 commuters travel to Moscow and Pullman from outlying communities, yet there is no areawide bus system, nor any organized vanpool system. An experimental bus was tried in Moscow in December 1975, and it received quite enthusiastic public response.

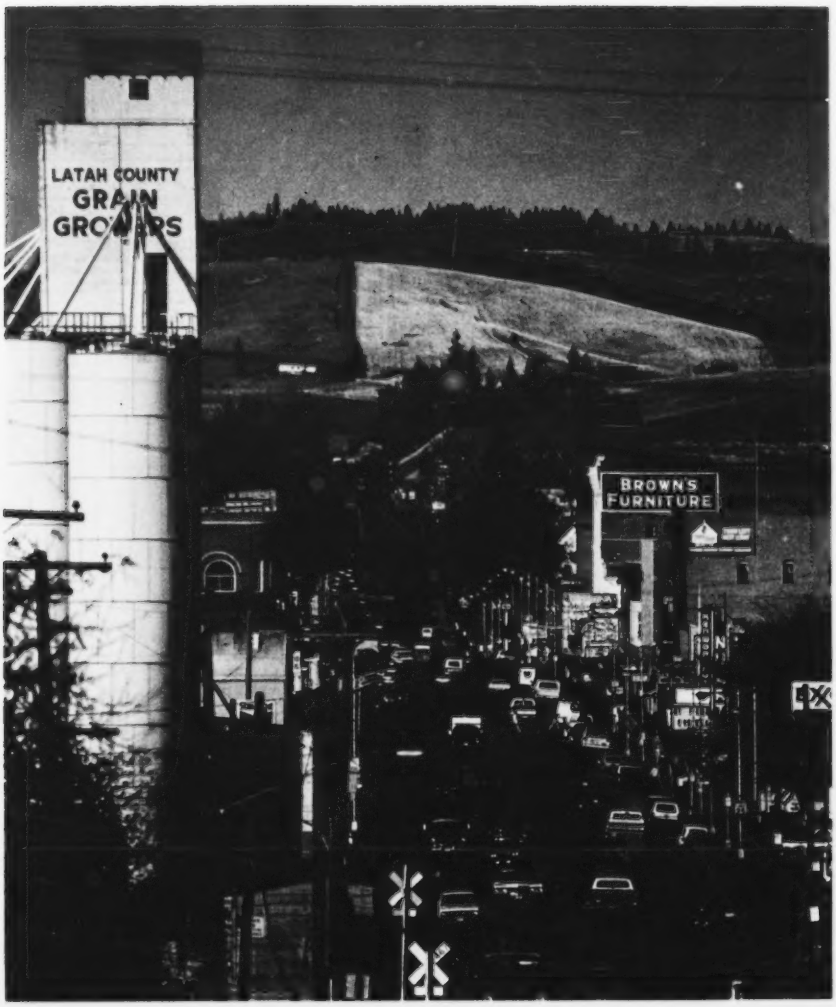
"In light of this considerable potential, the City Council Transportation Committee is studying the feasibility of mass transit options within Moscow, and also intercity connections. . . . . But we are hindered in developing transit proposals under the federal programs because the Feds have not provided a written list of acceptable sources of local matching money. . . . . Moreover, Idaho does not have legislation enabling local jurisdictions to raise funds in support of local transportation, such as was done in neighboring Pullman, Washington. Thus, citizens in Idaho are denied this important local decision. Again, federal pressure could rectify this problem."

At the Moscow Town Meeting (above), held in a vacant downtown department store, citizens of the area discussed their transportation problems with Secretary Neil Goldschmidt (right).

Dave Peckham, Ad Hoc Committee on Bikes: "We need more sensible transportation options for people. Moscow is an ideal-size town for the bicycle. All of the town is quickly, though dangerously, accessible by bike. In cities like Moscow, Lewiston, and smaller communities without bus systems, the bicycle is the best alternative to the auto for local transit.

Below left, downtown Moscow.

Below, several speakers and some members of the audience advocated more use of bicycles in the town.



Photos by Phil Schofield

The American people are in dire need of new modes of transportation. Some transit experts recognize the potential the bicycle has for meeting local travel needs, but it has yet to receive the serious attention in Washington or Boise that it deserves."

Rick Howard, president of the student body at the University of Idaho: "The University of Idaho is located in a small community in a relatively isolated area of Idaho. The community and the university have an important working relationship with the industries, the state agencies, and the people of the more populous southern region of Idaho. It is important for the University of Idaho to draw upon the students and other resources of the entire state. Unfortunately, the University of Idaho is geographically separated from the rest of Idaho.

"The university relies on transportation to the rest of the state. However, transportation is itself limited. Only one bus line and one small airline serve the Moscow area. Individual use of the highway system is the primary transportation we use. . . . .

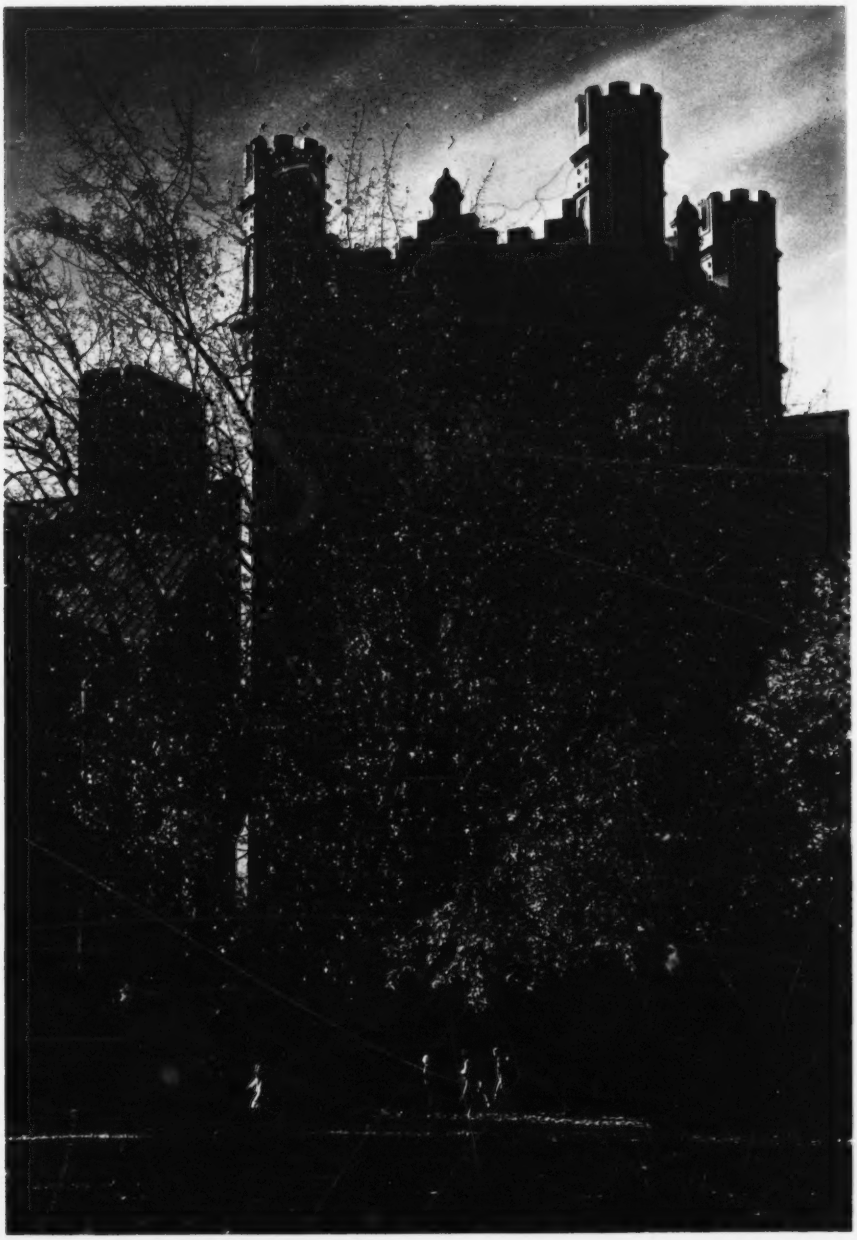
"Energy consumption is large, because of the length of the trip and the additional gasoline used, associated with cold weather. Also, about 80 percent of the 2,000-plus students using these highways own their own vehicles. Many underclassmen are brought to and from the university by family members, which doubles energy consumption. . . . .

"The highways are built through several mountain passes and canyons. They are often saturated on holidays and other University of Idaho breaks. These, with bad road conditions brought on by winter weather, make highway travel dangerous. Several University of Idaho students die each year from accidents on Highways 95 and 55. Although some recent improvements have been made to Highway 95, more attention to this highway and to State Highway 55 is warranted. And other kinds of transportation—buses and rail systems—should be looked at."

Robert Ferguson, academic vice president, University of Idaho: "As you're painfully aware, we live today on decisions made in the past, many of which are irreversible. Chances are, even knowing what we do today about our petroleum supplies, that California still would have attracted a lot more people than Idaho over the past several decades. Perhaps we could have made California a bit more fuel-efficient, but it was the land of

Right, the Administration Building of the University of Idaho in Moscow.

Below, part of the audience at the Town Meeting.



opportunity in the 1950s and 1960s. The point is that I think it does very little good to look back and lament. I think what we really need is to look forward and plan.

"The actions of the 1980s and 1990s will be focused on the sparsely populated western United States. We recognize that our numbers are small—the whole state of Idaho would hardly make a good suburb of Chicago—and yet these wide-open spaces are very important to the future of this country. Our agricultural production helps pay the oil bills all over this country. Our mineral production is of increasing importance, as the world resources are depleted or controlled by cartels. Our energy supplies are of high importance, and our forest products are needed to produce the two million new home starts needed annually.

"Transportation is as much our lifeblood as it is the lifeblood of the commuter or the manufacturer in the metropolitan area."

Joe Walker, state legislative representative, District 5: "Within the next two to three years, the tax uncertainties, the budget and program adjustments in Idaho will be stabilized. The public sector will reach an equilibrium in services and revenues. We will find solutions to our public service problems of how much money and who pays.

"But the Moscow region can ill afford to wait two years to solve economic development problems. Transportation and related issues are vital to our economic well-being. We need immediate actions on streets, highways, bypasses, and parking problems, to name a few.

"Undoubtedly, Secretary Goldschmidt, you and your contemporaries will be facing tax reduction budgets, or the threat of them, in the federal government. To the extent that you have transportation funds available for small cities with growing urban developments, we would appreciate your assistance and influence. Certainly, our problems in Moscow must be common in other areas throughout America. As you develop your transportation policies, it is our hope that you will give ample consideration to small cities."

Secretary Goldschmidt's closing remarks: "We are going to finally have in this country, over the next two or three years, a program by which you are going to develop energy conservation goals for your community, and ultimately for your state. That's the way we become independent, and we ultimately have the ability to move our people, move our products, keep our jobs, keep our health, keep our retirement income, provide an education for those who need it, and frankly be able to use some gasoline and go out and fish on the weekend.

"We can do all of that if we don't waste. Please, stick to this energy agenda in your community, in your way, and try to get us to help you the way we should."

A Blue Ribbon Panel Studies FAA Procedures

It's often said that the most dangerous part of a trip by air is the drive to the airport.

It may be true, but a growing number of people are beginning to feel that the rest of the trip could be made safer, too.

This concern for maximum safety led the Secretary of Transportation to ask an outside panel of experts, operating under the National Research Council of the National Academy of Sciences, to take a close look at the way the Federal Aviation Administration regulates the safety of aircraft design, production, and maintenance and to recommend improvements where they are needed.

Despite recent attention-getting crashes, air travel is remarkably safe—safer, in fact, than any other mode of transportation. U.S. airlines set new safety records in 1978, for the most miles flown with the fewest accidents.

"This record notwithstanding, FAA Administrator Langhorne Bond and I feel that the time is right for a thorough, independent, qualified review conducted by outside experts to examine our certification system with trained eyes," Secretary Neil Goldschmidt said in announcing the program.

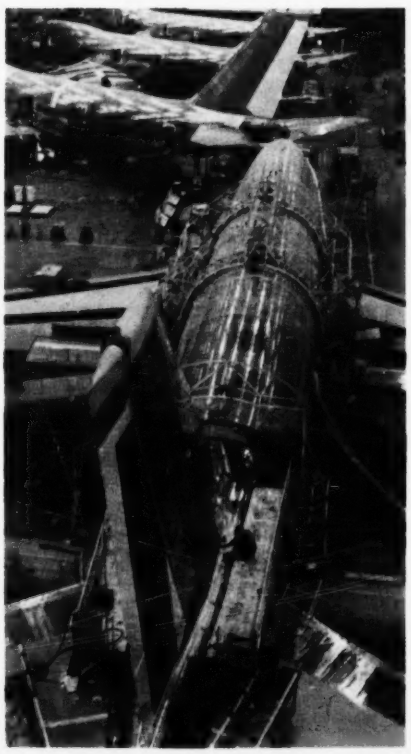
"We want to be able to assure the flying public that our procedures are sound, and we want to improve them where improvements are warranted."

The panel, headed by George Low, president of Rensselaer Polytechnic Institute and former manager of the Apollo spacecraft program and Deputy Administrator of the National Aeronautics and Space Administration, will conduct a six-month study of FAA airworthiness regulations and procedures and will report on its findings by June 30.

The study will cover both the aircraft design and production certification procedures and continuing airworthiness certification processes.

The study will concentrate on aircraft and maintenance procedures used by major commercial airlines and larger commuter airlines. The committee will not review FAA's procedures for certifying aircraft engines, general aviation aircraft such as those used by private pilots, or other aircraft weighing less than 12,500 pounds.

A panel of experts will look closely at FAA regulation of aircraft production.



Members of the panel, in addition to chairman Low, are the following:

- Richard B. Ault, former vice president for engineering at Western Airlines.
- Eugene E. Covert, director of the gas turbine and plasma dynamics lab in the department of aeronautics and astronautics at Masschusetts Institute of Technology.
- Bernard C. Doyle, a private aviation safety consultant and former chief of investigations for the Bureau of Aviation Safety at the National Transportation Safety Board.
- Lloyd Frisbee, former vice president and general manager of engineering and operations at Lockheed-California Company.
- Aaron J. Gellman, an economic consultant and president of Gellman Research Associates, Inc.
- Raymond C. Gerber, a retired airline pilot and air safety expert.
- David C. Hazen, professor of aeronautical engineering at Princeton University.
- Donald W. Madole, partner in the Washington, D.C., law firm of Speiser, Krause & Madole.
- James W. Mar, professor of aeronautics and astronautics at Massachusetts Institute of Technology.
- John L. McLucas, executive vice president for international communications and technical services for Communications Satellite Corporation, a former FAA Administrator, and a former Secretary of the Air Force.
- Maynard L. Pennell, former vice president for product development for The Boeing Company.
- Albert L. Ueltschi, a former airline pilot, now president of Flight Safety International, Inc.

During three days of public meetings in Washington, D.C., in January, panel members heard from Federal Aviation Administrator Bond, Deputy Secretary of Transportation William Beckham, United Airlines, Lockheed, and Boeing. One full day was devoted to testimony by aviation interest groups and concerned individuals. Secretary Goldschmidt met with the panel following the hearings.

As it continues its study, the panel plans to visit a number of aircraft production and airline maintenance facilities.

The New DOT Team

The new Goldschmidt team at DOT is taking shape. It includes some new faces, some people who have worked with the Department before and are returning, and some who have been around awhile and are now moving up to new positions. These brief interviews, arranged alphabetically, tell a little about who they are and what they will be doing.

William Beckham

For William Beckham—the new Deputy Secretary of Transportation—it's the second time around in the Carter Administration. After serving as Assistant Secretary for Administration in the Department of the Treasury for nearly two years, he returned home to Detroit to become an executive with the Ford Motor Company.

Now, as the Deputy Secretary, Beckham says he plans to manage DOT in a way that will ensure that the policy directions enunciated by the Secretary and the President are carried out. At certain times when the Secretary is away, Beckham will become Acting Secretary and will have statutory authority over all matters in the Department.

Beckham has been a deputy once before—deputy mayor of Detroit under Mayor Coleman Young. Of that experience he says, "We were dealing quite heavily in urban mass transit, so I have a pretty strong interest in that area."

He says one of the major problems he encountered at that time was "getting better and quicker responses out of the federal government." A major effort was seeking state and federal approval for a subway system in Detroit.

Beckham's first government service was as a staff assistant in the Washington office of the late Senator Philip Hart of Michigan. Prior to that, he had managed the Senator's Michigan district office.

In the three years between 1974 and 1977, Beckham was staff director of the Equal Opportunities Subcommittee of the House Education and Labor Committee. One of his most memorable recollections of this position was being instrumental in passage of the bill that established ACTION as a federal agency.

While Beckham's experience has given him an excellent understanding of the auto industry, he has severed all relationships—including possible future commitments—with Ford, citing conflict of interest statutes.

"I am out of the private sector at this point," he says, "and am committing myself to carrying out my responsibilities as Deputy Secretary."

Leonard Bergstein

Len Bergstein is firmly committed to the idea that government should deliver on its promises.

As an administrative assistant to Governor Robert Straub of Oregon from 1974 to 1978 and in a similar post with then-Mayor Neil Goldschmidt in Portland in 1978 and 1979, Bergstein has had first-hand experience with what it takes to make government work.

Now, as a special assistant to Secretary Goldschmidt, he handles a variety of projects, often dealing with several of DOT's operating administrations. He gets involved in planning the Secretary's schedule and serves as a talent scout, interviewing prospects for the Secretary's staff.

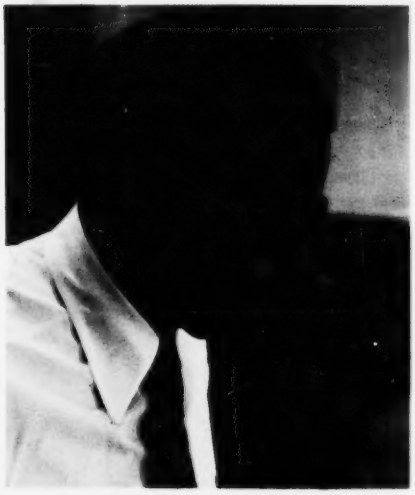
"Using the President's priorities, the Secretary has to help articulate where the country is going and how transportation helps us get there," Bergstein says. "When the President says energy is a number one problem area, then it's the Secretary's responsibility to say, 'This is the way transportation fits into that picture. This is how transportation relates to energy.' "

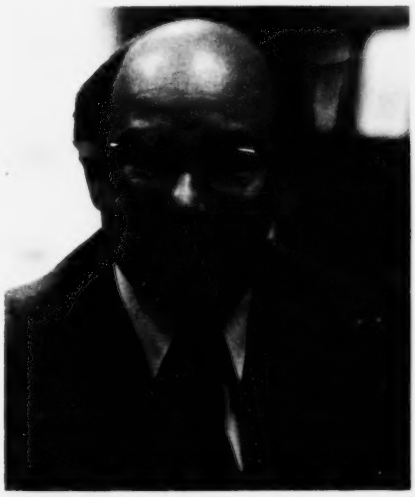
The same applies to jobs and the economy. Bergstein sees transportation as "a thread that ties together a variety of domestic priorities."

These priorities include the creation of an efficient transportation system that helps build a healthy economy, he says.

One of the Secretary's important responsibilities is simply making the Department work.

"We want to show the American people we can make the important

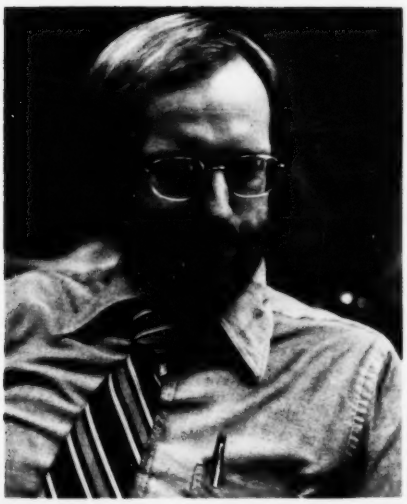




William Beckham

Leonard Bergstein

Takes Shape



Ruth Ann Dodson

Angus Duncan

decisions that come before this Department," he says. "We have to solve the controversies and get these decisions made. If we say we're going to do something, then we'll do it."

A graduate of Wesleyan University in Connecticut, Bergstein was a social science teacher in New York while working on his law degree at New York University Law School. He went to Portland as a VISTA lawyer-volunteer with the county legal aid society. Later he managed political campaigns, including the successful gubernatorial campaign of Robert Straub.

Ruth Ann Dodson

In 1977, eight years after becoming an elementary school teacher in Portland, Oregon, Ruth Ann Dodson decided to switch careers and become scheduling assistant to Mayor Neil Goldschmidt.

Her timing was excellent.

Two years later, she came to Washington—for the first time—to handle Goldschmidt's schedule as the country's sixth Secretary of Transportation.

"There are many people at DOT who work on different problems for the Secretary," she says. "I feel my responsibility is primarily coordinating what goes on around him."

In a very short time, she has discovered some major differences between city government and the federal bureaucracy. "For one thing," she says, "there are many more demands on Neil's time now that he is Secretary than when we were in Portland."

Dodson says she is still astonished by Goldschmidt's stamina for work after being with him for nearly two years. "His day begins in the morning with a swim and ends late in the evening. He takes most of his paperwork home," she says.

The new experience of working in Washington keeps her looking forward to each day. "I have found that the people in this Department are very understanding of newcomers and have bent over backward to make things easy for me."

But the thing that has made the greatest change in her life, according to Dodson, is "getting in a four-person carpool."

Her husband, Mark, also received an offer to become part of the new Secretary's operation. So he took a leave of absence from the Portland law firm where one of his areas of specialization was transportation. He is now an attorney in DOT's Office of the General Counsel.

Both like to run, swim, and exercise. "Generally we run together on the Mall. For someone from Portland, that's quite an experience." Actually, the Secretary's exuberant aide is a Canadian by birth who moved with her family to Portland when she was five years old.

Angus Duncan

Angus Duncan believes ridesharing represents "one of the best and most immediate opportunities" for the Department of Transportation to promote energy conservation.

As DOT's director of energy policy, Duncan is developing proposals to make the Department more aggressive in encouraging energy efficiency and conservation. In this position, he reports to the Assistant Secretary for Policy and International Affairs.

When he served as administrative assistant to Mayor Neil Goldschmidt in Portland, he had an unusual assignment. He was responsible for the development, community review, and council approval of the city's energy conservation program, which attracted national attention as the most ambitious such effort among U.S. cities.

"Most of the decisions to conserve energy are made outside Washington," Duncan says. In the case of ridesharing, for example, conservation depends on decisions by a worker to share a ride, by an employer to encourage ridesharing, or by a city or state to set up a ridesharing agency. DOT must try to provide information that will influence such decisions, he says.

Duncan hopes to have DOT set up a "ridesharing clearinghouse" with a phone number so local officials or employers can get information.

"We will try to provide staff support

so that someone from here can go out and consult with governments and employers for a day on ride-sharing problems," he says.

He feels that the Department should practice conservation internally so well that it will become an example for others. "The example value of public agencies that take conservation seriously is extremely important."

From 1975 to 1979, Duncan was an administrative assistant to Mayor Goldschmidt, first for community and press relations and then, starting in 1978, for policy matters. Representing the mayor, he helped in the drafting of regional energy legislation for the four Pacific Northwest states; this legislation is now under consideration by Congress. He also was named by the governor to the Oregon Energy Policy Review Committee.

Duncan is a graduate of Harvard University, where he majored in government.

Robert Holland

Public affairs director Bob Holland had only a slim background in transportation, having once worked as a truck driver in Falls Church, Virginia.

"That wasn't much help when I arrived at DOT three years ago," he says, "and the phones were ringing off the hook with questions about everything from the Concorde to deepwater ports.

"In the early days of a new Administration, you either learn fast or go under."

A former reporter at the Syracuse *Post-Standard* and editor at the Philadelphia *Inquirer*, Holland was public relations director at Temple University in Philadelphia before joining the Department as deputy director of public affairs.

"Public affairs has to be the window people use to see inside a large and complex organization," Holland says. "For example, our office administers the Freedom of Information Act. But when possible we try to avoid making people file for information under the Act—especially reporters on deadlines.

"I like the slogan I heard from a Justice Department official—'When in doubt, give it out.' "

Frances Lewine, former AP White House correspondent, is deputy director of the public affairs office. She and a staff of professionals dig out information for reporters and produce print and film reports explaining the Department's actions and policies.

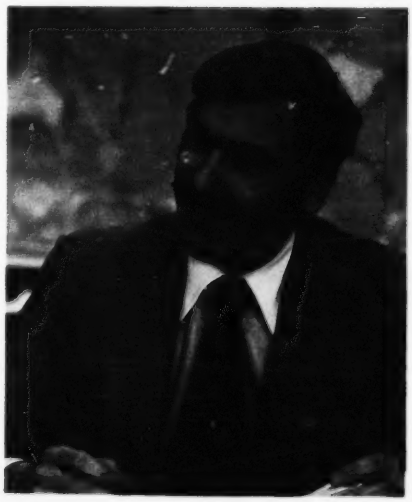
William Johnston

For three years, William Johnston has been Associate Director of the White House Domestic Policy Staff. Now, he is DOT's Assistant Secretary for Policy and International Affairs.

Transportation was one of the issues he was involved with during the time he was a member of the President's national issues staff. He sees his new office as being "the point at which the policy choices that cut across the modes should intersect. We are in the position of being able to recommend what, on transportation grounds, should be departmental policy, although in many cases, it may mean simply providing the Secretary with a second opinion."

Johnston is a frequent companion to Secretary Goldschmidt during his travels, and one of the issues in which they have been intensely involved is rail restructuring in the Midwest. Although the Federal Railroad Administration has the operational responsibility for a large part of this process, the policy and international affairs office is trying to bring together the various policy concerns that relate to the issue.

Johnston cites a study on truck sizes and weights in his office as another example of cross-cutting responsibilities. "While the National Highway Traffic Safety Administration is concerned primarily with truck safety and the Federal Highway Administration focuses most on roadway maintenance, we must balance a wide range of concerns. We are the place where all the pieces come together in terms of what the Department's policy ought to be."



Robert Holland

William Johnston

Eleanor Lewis

Theodore Lutz

In the area of international issues that fall under his jurisdiction, Johnston clearly supports a move to liberalize the international air system so that U.S. carriers can be more competitive. In what he describes as an "ongoing set of negotiations," a team composed of State Department, Civil Aeronautics Board, and DOT personnel is at work on the problem.

Johnston has pursued careers in research and writing, construction, and consulting. He holds a B.A. degree from Yale University, where he graduated with honors in 1967. He has done further study in the fields of mathematics, economics, and tax laws at The George Washington University.

Eleanor Lewis

As she drove back to Washington after a stay on the West Coast, the sight of the U.S. Capitol at dusk inspired her to work on the Hill. The very next day, Eleanor Lewis went knocking on doors. She landed a job as staff assistant to U.S. Representative Edith Green of Oregon, and it was while she was working in that office back in 1964 that her path first crossed that of Neil Goldschmidt.

Lewis, who came to the Department of Transportation last September to fill the position of executive secretary, says the function of her office is to manage the paper flow for the Secretary and the Deputy Secretary. Since her office receives approximately 5,000 pieces of correspondence each month, the job is a big one.

"The Secretary is very concerned that we be responsive to the public and to all of our constituents," she says. "Our role is to facilitate communication and to share information on both the programs and the policies of the Administration and the Department."

In April, the Department will get a new automated system to help speed things along. "Correspondence expediters" in each of DOT's Secretarial offices and administrations work closely with Lewis's staff to ensure the timely handling of all material.

Other key concerns of the executive secretary's office range from managing DOT's 18 advisory committees to handling administrative matters for the immediate Office of the Secretary.

"The training you get on the Hill in a Member's office helps you to become very versatile," Lewis says. "What I bring to this job is mainly judgmental skills."

Prior to joining DOT, Lewis—who holds a master's degree in political science—was special assistant to the Assistant Secretary for Legislation at the Department of Health, Education, and Welfare.

Lewis's unofficial involvement with transportation has been pretty exotic. She's ridden camels in Cairo, taken the Trans-Siberian Railroad across the Soviet Union, and ridden rapids in New Zealand. As if that weren't enough, she's hiked on some famous foot trails and flown on every kind of aircraft from sail planes to 747s.

When she retires, she hopes to play her violin with a community orchestra.

Theodore Lutz

Theodore Lutz—former Deputy Under Secretary for Budget and Program Review at DOT and former general manager of the Washington Metropolitan Area Transit Authority—is fired up and ready to go again, this time as head of DOT's Urban Mass Transportation Administration.

His return, he says, was prompted by a major Presidential speech last summer that singled out public transit as a central component of the energy situation. "Being an advocate of good public transit, I thought this was a significant step," Lutz says.

The key issues to be addressed in his newest job are "ensuring the effective implementation of the Administration's whole energy program, getting a part of the windfall profits tax set aside for public transportation, and making sure this money is managed effectively."

As far as federal regulation of bus manufacture is concerned, Lutz believes that it is absolutely necessary to make sure such regulations give more latitude to the local people and

more incentives to the manufacturers. "There are some broad standards the federal government should insist on as national policy, but the idea that we have to tell someone how many axles or windows a bus must have raises some serious questions about a heavy federal hand," he says.

If Lutz has his way, a considerable amount of his time will be spent on the internal operations of UMTA. "It's no longer a child," he says. "It's sort of a bustling adolescent with a lot of strength and energy, but it still hasn't reached maturity organizationally."

Lutz also hopes to tighten procedures and streamline the system for grant applications "so the guy in the street will know what we are doing."

Lutz has already established an enviable record in his field. While at Washington's Metro, he was directly responsible for 6,500 employees and supervised an annual construction program of $300 to $400 million. The recipient of many awards, he was named "Washingtonian of the Year" by *Washingtonian* magazine in 1978. The following year, he was *Modern Railroads* magazine's "Rail Man of the Year."

Susan Williams

She's something of a phenomenon within the old-boy network of management. But Susan Williams quite frankly attributes her rise to Assistant Secretary for Governmental Affairs at DOT to "being able to get the job done."

Her new job has two parts. First, there is the legislative aspect. A familiar face on Capitol Hill, she is almost daily involved with trying to communicate to the 435 members of the House and the 100 members of the Senate what the Department of Transportation is all about. In short, she and her staff of Congressional relations officers are responsible for getting DOT's legislative agenda past Congress.

"It isn't just a matter of articulating policy—you need the facts to back it up. It's darn hard work. Not only do we go to hearings and listen to what members are saying, we also go out across the country to talk to transportation users and everybody who will be affected by almost every piece of legislation before it is written. It doesn't all happen in one place."

Another aspect of her job is intergovernmental affairs—dealing with local and state governments and special interest groups. Williams, who describes the intergovernmental office as a "frenetic environment," calls the people who work there "crisis managers."

Williams began her professional career as an editor at the Center for Applied Linguistics. She moved on to become an education consultant at the Department of Health, Education and Welfare, where she helped write the original Head Start program. It was while traveling across the country for HEW that she became interested in politics.

The Philadelphia native then served as a special assistant to Walter Fauntroy, the District of Columbia's delegate to the U.S. House of Representatives. After that, she came to the Department of Transportation as director of the Office of Congressional Affairs.

"I think we have changed the nature of the Congressional office," she says. "I brought people in who really could deal with substance. Some have worked on the Hill, and many have law backgrounds. I really believe that you're only as good as the people around you."

Douglas Wright

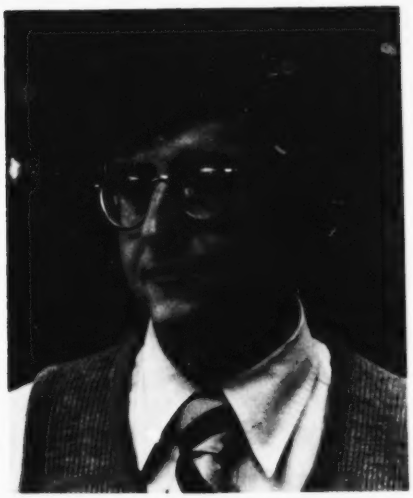
Doug Wright wants to give U.S. cities flexibility in their choice of transportation projects. He says they often have been put in the unhappy position of having to choose a highway or a transit project before they have determined which option really meets their local needs.

He wants cities to have the same kind of flexibility that Portland asserted for itself when Neil Goldschmidt was mayor and Wright was his chief transportation planner.

In his present post as Associate Deputy Secretary of Transportation, Wright maintains liaison with the Federal Highway Administration and

Susan Williams

Douglas Wright



David Yaden

the Urban Mass Transportation Administration. It is his responsibility to review planning and procedures in an effort to add more flexibility to their activities.

Current federal procedures support and encourage the "up-front decision"—the choice of a highway or transit project before a full analysis has been made, he says.

"Many local jurisdictions are not aware of the flexibility that exists now, of the opportunities to withdraw Interstate highway funds and use them for other purposes," Wright says.

He cites the Secretary's view that "we don't build a transportation project for its own sake but for a broader purpose, such as the protection of a city residential area, the redevelopment of the downtown, or the redevelopment of an industrial site that lacks good access."

As an example of developing a transportation project that meets needs, Wright points to Portland's decision to reject a major freeway and to use the funds instead for a light rail line and related highway improvements. "We didn't start out saying, 'It's our business to go out and build a light rail line,' " he says. "We asked the question: how can we provide the kind of movement a freeway would offer but without the kind of impacts on the environment, on the central city, and on energy consumption that a freeway would create?"

Wright, who grew up in Des Moines, Iowa, was Portland's chief transportation planner for five years before he became the city's planning director in early 1979. As a planner with the Cleveland planning commission from 1970 to 1973, he developed transportation policy proposals. He also did mass transit studies in Iowa City in 1970.

David Yaden

As a consultant, David Yaden learned that public agencies often are out of touch with public opinion.

When several state departments of transportation asked him to analyze community views on proposed highway sites, he found the agencies had a very poor understanding of those views. "The experience taught me the degree to which governmental units simply fail to make their plans clear to important constituencies," he says.

As a special assistant to Secretary Goldschmidt, Yaden now finds that his sensitivity to public opinion is an important part of his job. Beyond special assignments from the Secretary, he spends a major portion of his time as liaison with the Federal Railroad Administration.

Shortly after arriving in his post last summer, Yaden became involved in strategies for coping with the complicated bankruptcy problems of the Rock Island and Milwaukee Railroads. The Department had a fairly well-structured process in place for dealing with the probable termination of operations on the western half of the Milwaukee, he says. After the western lines were shut down, it was expected that other carriers and some states, with DOT assistance, would pick up some of the lines and continue service to nearly all shippers.

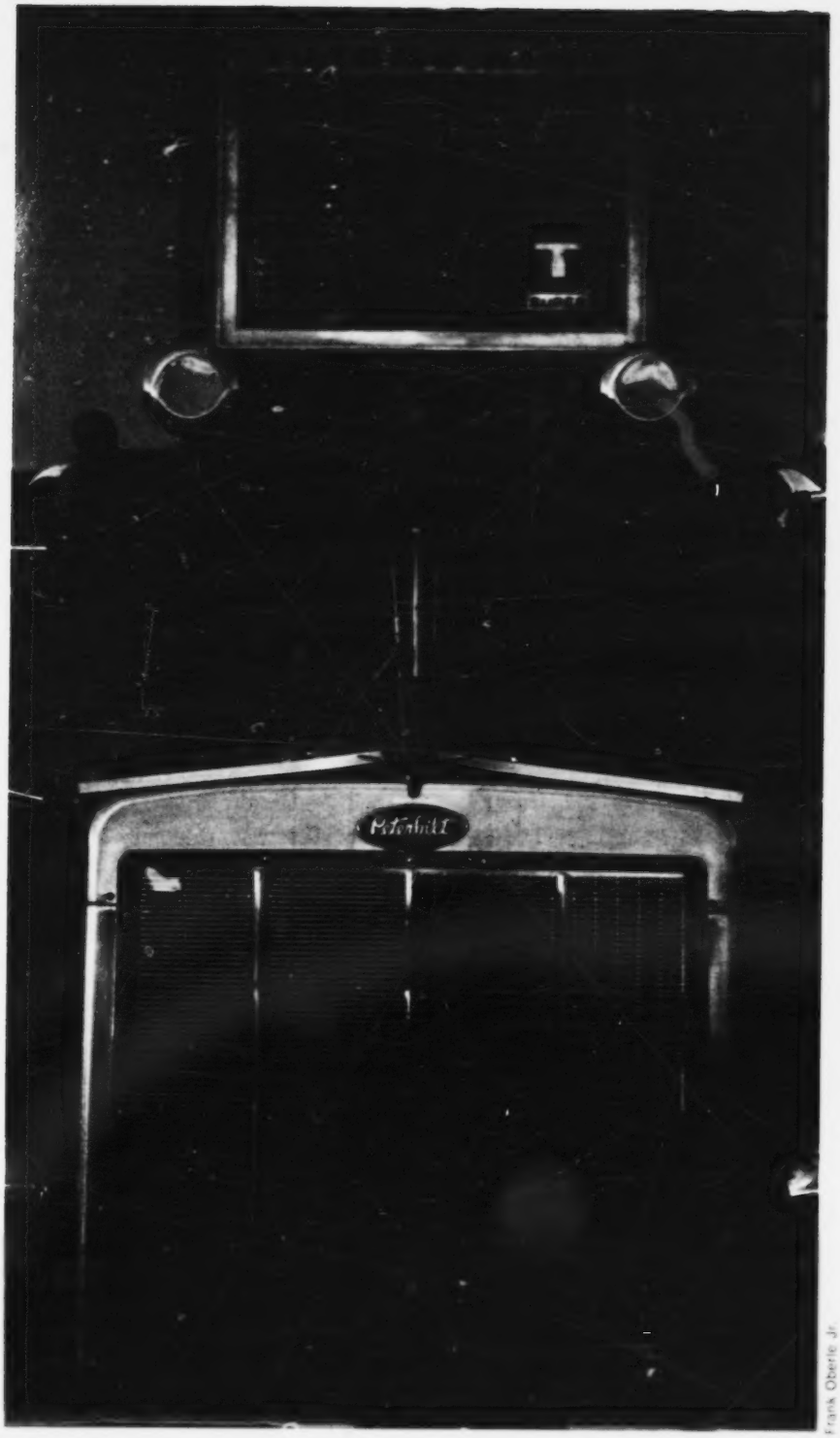
"But this was not communicated to all parties, and as a result there was a lot of resistance to letting the process work," Yaden says.

"If we don't get ahead of some of these problems and help the Midwest railroads restructure themselves, they are not going to generate enough cash to improve service. And better service is the goal. But, if we are serious about restructuring the Midwest rail lines, we must keep in touch with what's happening out there. We need to make this less of a crisis situation and see that essential service is maintained and improved while trackage or service that is not economically feasible is terminated."

Yaden, who trained under public opinion analyst and columnist Sam Lubell, had his own consulting firm in Portland. He conducted public opinion work for Goldschmidt in 1972, when he ran for mayor. Yaden then served as an administrative assistant to Congressman Don L. Bonker of Washington state from 1975 to 1978.

Early in 1979, he joined Mayor Goldschmidt's staff.

Upset by a lack of diesel fuel, rising prices, and other problems, many of the country's independent truckers pulled over to the side of the road last year and stopped driving.



Frank Oberle Jr.

Trucks Stopped

Administration, Truckers Discuss Relief for Problems

In the spring of 1979, a number of America's independent truckers pulled their rigs to the side of the road and stopped.

There they stayed for nearly two weeks, while consumers did without fuel, milk, produce, and other products that would normally have been delivered by these trucks.

Drivers who might otherwise have been persuaded to return to the road were discouraged by threats of violence—threats that were occasionally carried out, though by whom it was hard to say.

This is the story of what independent truckers—and representatives of state and federal governments, including the Department of Transportation—did to alleviate some of the truckers' problems, and to get freight moving again. It is to be a continuing story, most likely.

To begin with, who is an independent trucker, and why did he go out on strike?

In the simplest terms, he's a man—or a woman, since it's a growing field for females—who bought one or more trucks and uses them to make a living.

That means he is also a man in debt. A diesel tractor can cost as much as $70,000 on today's market, and a trailer, if he owns one, might run an additional $40,000. A trucker's payments on a tractor alone could run $800 to $1,400 a month.

Add to that the cost of fuel, tires, licenses and permits, maintenance, and insurance, and you have a picture of a man with a lot of overhead.

Then, too, independent truckers (they're also called owner-operators) can't haul just anything they want to haul, wherever and whenever they

want to haul it.

Independents stewed over their economic problems for several years, but the revolution in Iran and the ensuing jump in diesel prices and unavailability of the fuel was the last straw. Late last June, at a time when much of the nation's produce was approaching harvest, the shutdown began. Within a few days, representatives of a number of independent truckers' organizations had arrived in Washington armed with a list of grievances.

On the road, tempers flared as shutdown participants attempted to encourage other truckers to join the protest. There was sporadic violence.

Critical gasoline and food shortages developed in some areas. Household moving companies, which depend heavily on owner-operators, warned that the shutdown was creating problems that would require months to resolve.

In response to a request from the independents, White House representatives met with individual owner-operators and with representatives of owner-operator associations. On June 22, the White House announced a number of measures designed to deal with owner-operator concerns.

"The truckers have many legitimate concerns," White House Press Secretary Jody Powell said. "Some can be remedied speedily, some will take time and much hard work to improve. . . . .

"None of the problems faced by the independents can justify the lawlessness that has occurred in some parts of the country. We will not tolerate shootings, vandalism, or violations of individual rights. Law enforcement is primarily a state responsibility, but the federal government will provide every assistance to the states to help them preserve order."

The Administration then took immediate steps to deal with the truckers' chief complaint: the shortage of diesel fuel. It encouraged domestic refineries to step up diesel production and began a major audit of the nation's refineries to ensure that refining capacity was being used and that available supplies were not being withheld from the market. It shifted diesel allocation priorities slightly to increase the supply available to truckers.

And the Department of Transportation set up an Energy Situation Center at its Washington headquarters to help truckers locate the fuel they needed (see "DOT's Energy Situation Center" on page 28).

To help ease the price squeeze caused by the rapid increases in diesel prices, the Interstate Commerce Commission imposed a fuel surcharge that certificated carriers were required to pay to independent drivers to make up for the increased fuel costs the independent truckers were facing. This surcharge was adjusted every week to take new price hikes into account. Although the ICC has no jurisdiction over agricultural truckers, it urged agricultural freight brokers to apply the surcharge voluntarily.

The President also sent telegrams to governors of all 50 states, urging them to deal with another complaint of the owner-operators: differing state limits on truck sizes and weights. Although maximum truck weights on Interstate highways are set by federal law, state governments are permitted to set and enforce limits lower than the maximum. The variations in state weight and size limits make it difficult for truckers to take full advantage of their trucks' capacity for freight.

"Obviously, in different states the question of truck weights involves complex issues of road capacity, cost allocation, and safety. I believe that the states should continue to make the final judgments on these difficult issues," the President wrote.

"There would be, however, a substantial benefit to the nation's transportation system if allowable truck weights were standardized nationwide. I am urging all the governors and state legislatures to consider this potential benefit and to review carefully their decisions on truck weight and size limits in light of the current situation."

In order to deal with the truckers' remaining complaints, the President created a federal interagency "working party" to meet with the owner-operators and try to resolve problems. The group, which was chaired by a representative from the Department of Transportation, was instructed to report back to the President within 90 days. (A companion group, dealing principally with problems peculiar to the haulers of exempt agricultural commodities, was chaired by the Department of Agriculture.)

Members of the DOT-chaired group came not only from the ranks of independent truckers and from DOT, but also from the Departments of Energy, Agriculture, and Justice, and from the ICC. Representatives of the American Association of State Highway and Transportation Officials, the American Association of Motor Vehicle Administrators, and the National Governors' Association also participated in the discussion of some of the issues.

The meetings of the DOT working party were a valuable avenue of exchange between the government and the independent owner-operators. Each side found out more about the problems and constraints of the other side than they had ever known before. Herb Jacob and Jim Johnston of the Owner-Operator Independent Drivers' Association of America thought the meetings were productive. "They gave the owner-operators a golden opportunity to discuss many of our long-standing problems," says Jacob. "But," Johnston adds, "the real test will come now in how the problems we talked about are handled."

The important first step toward a resolution was the submission of the working party's report to the President by Secretary Goldschmidt on October 23. The report covered a variety of areas important to the truckers, including diesel fuel price and availability, contract relationships between owner-operators and carriers, the diesel fuel surcharge, overloading by shippers, truck size and weight, uniformity in the administration of state truck regulations, and safety.

"The independent owner-operators represent a critical segment of the transportation industry," Secretary Goldschmidt said in transmitting the report to the President. "They are dominant in the carriage of produce and in the movement of household goods, and are active in the hauling of commodities that move in full truck-load quantities. The question of what the federal government can do to resolve the problems of the owner-operators deserves serious and careful attention."

DOT's Energy Situation Center

A cold winter, a revolution in Iran followed by a cutoff of its oil, another rise in oil prices by OPEC nations, declining inventories in this country, and an urgent need for fuel for planting crops—these events led to a fuel crisis in the U.S. last spring and summer.

Gasoline lines began to appear in several major cities, there were shortages of diesel fuel, and prices rose rapidly for all petroleum products. Then in June, many of the country's independent truckers protested these conditions by going on strike, tying up the nation's highways and hindering the movement of goods (see "Trucks Stopped" on page 26). Violence flared in many areas as truckers on strike clashed with those still hauling freight.

The Energy Situation Center was operated by persons from DOT's policy office, Federal Highway Administration, and Research and Special Programs Administration and other federal agencies.

To deal with this emergency, the Department of Transportation set up an Energy Situation Center on June 27 at its Washington headquarters, staffed by representatives of the Departments of Transportation (primarily from the Federal Highway Administration), Energy, Agriculture, and Justice, and the Interstate Commerce Commission. The purpose of the Center was to help keep freight moving on the nation's highways. Three toll-free "800" lines were set up in the Center, and the numbers to call were spread around the country by two White House press releases, by such organizations as the National Association of Truck Stop Operators, and by other groups that serve the traveling public.

During the strike, which lasted until July 7, the main function of the Center was to tell those truckers still on the road where they could buy fuel and where they could find "safe corridors" (set up and protected by the states) on which they could get their loads through without being blocked, harassed, or hurt by strikers.

The Center operated 24 hours a day during the strike. After the strike ended, the Center continued to operate through the fall, but on a reduced schedule.

As fuel shortages increased, calls to the Center were primarily from truck stop operators asking for help. Center personnel worked with DOT's regional emergency transportation coordinators in nine field locations throughout the country, state energy offices, other state and local government representatives, oil companies, and others to see that diesel fuel got to places that needed it.

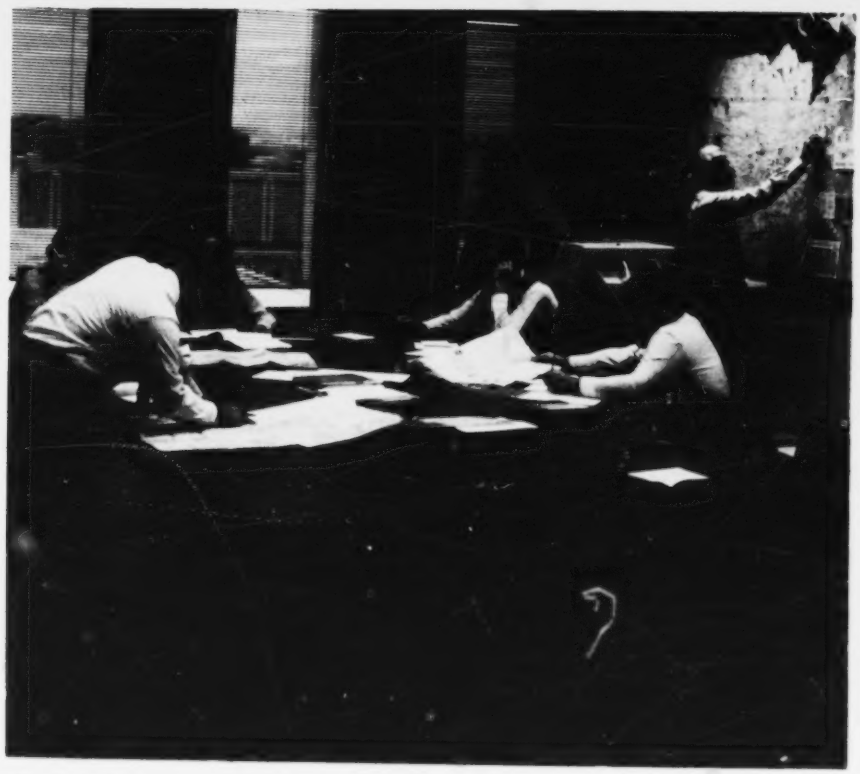
Some examples:

- The owner of a truck stop in Spooner, Wisconsin, called, urgently requesting fuel. It is the only truck stop that sells diesel on the heavily-traveled route between Superior, Wisconsin, and Eau Claire, a distance of 150 miles. The Center contacted the Wisconsin state energy office, and within 24 hours, a truckload of the state's set-aside fuel had arrived at the Spooner truck stop.
- In July and August, truck movement was seriously disrupted in Montana because of shortages of fuel along the I-90/94 corridor. Calls came from truck stop operators requesting fuel and state officials. Representatives from the Department of Energy met with the Governor of Montana to help get the situation under control and worked with the state energy office and directly with oil companies to request allocations for truck stops that were out of fuel.

Along with its assistance to truckers and truck stops, the Center kept up-to-date on the total transportation fuel situation nationwide. It provided reports to the White House on petroleum, diesel, jet fuel, agricultural fuel, and gasoline supplies, on highway construction activities, and on rail and mass transit.

According to George Barry of DOT's office of energy transportation, the continuing flow of information from field regional emergency transportation coordinators was "essential in keeping the Center informed." Dr. Donald Trilling of DOT's policy office, the overall crisis coordinator for Center activities, adds, "The Center would not have been effective without the splendid cooperation of the Department of Energy and other agencies."

The Center has been closed since early December, but the personnel involved are ready to start up again on very short notice, should another crisis arise.



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Recent DOT Publications

Reports and Studies

(single copies available from office shown; please enclose a self-addressed mailing label)

Analysis of the Impact of Driver Education on the Licensing of 16- and 17-year-olds, HS-804-850, August 1979; National Highway Traffic Safety Administration, Publications Office, General Services Division, NAD-42.

Analysis of Mopeds as a Potential Safety Problem in the United States, Vol. I: Review of the Literature and Data Search, February 1978-May 1979, HS-801-887; National Highway Traffic Safety Administration, Publications Office, General Services Division, NAD-42.

Energy in Transportation, DOT-RSPA-DPB-20-78-13, May 1978; Research and Special Programs Administration, Office of Systems Engineering, DPB-20.

Common Carrier Obligations and the Provision of Motor Carrier Service to Small Rural Communities, July 1979; Research and Special Programs Administration, Office of University Research, DPB-54.

Problems of Truck Owner-Operators, October 1979; Office of the Secretary, Office of Transportation Economic Analysis, P-30.

Copies available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, at prices indicated:

An Investigation into the Noise Interference Problems of Logan Airport, Boston, Massachusetts, AD-A072-057/3GA, April 1979; $3.00.

Aviation Automated Weather Observation System, AD-A072-119/1GA, March 1979; $7.25.

Airport Surface Traffic Control System Requirements Analysis, AD-A072-170/4GA, May 1979; $7.25.

Aircraft Delays at Major U.S. Airports Can Be Reduced, Report to Congress, PB-299-442/4GA, September 1979; $4.50.

Workload and the Certification of Helicopters for IFR Operation, AD-A072-758/6GA, June 1979; $7.25.

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Guidelines for Assessing the Environmental Impact of Public Mass Transportation Projects, Executive Summary, PB-299-696/5GA; $4.00.

Guidelines for Assessing the Environmental Impact of Public Mass Transportation Projects, Notebooks 1 through 5, PB-299-697/3GA, February 1979; $21.50.

Truck Tire Cornering and Braking Traction Study, PB-299-437/4GA, March 1979; $5.25.

Consumer Behavior Toward Fuel-Efficient Vehicles, Executive Summary, PB-298-370/8GA, April 1979, $4.50; Final Report, PB-298-569/5GA, $9.25.

Mobile ORBIS III Speed Enforcement Demonstration Project in Arlington, Texas, Program Evaluation, PB-299-397/0GA, July 1979; $5.25.

Techniques for Predicting High-Risk Drivers for Alcohol Countermeasures, Vol. I: Technical Report, PB-299-590/0GA, May 1979; $8.00.

Feasibility of Developing Training Programs Designed To Improve Deficient Driver Factors, Vol. II: Identifying Accident Avoidance Behaviors, PB-298-768/3GA, January 1979; $6.00.

The Merger Between the Seaboard and Atlantic Coast Line Railroads: A Case Study, PB-299-537/1GA, March 1979; $6.00.

Proposed Railroad Relocation, Consolidation and Grade-Crossing Elimination Project for Columbia, South Carolina, PB-299-157/8GA, July 1979; $10.75.

Evaluation of Signal/Control System Equipment and Technology, Task 2: Status of Present Signal/Control Equipment, PB-299-891/2GA, January 1979; $6.50.

Contact Stresses on Bodies with Arbitrary Geometry, Applications to Wheels and Rails, Technical Report No. 7, PB-299-409/3GA, April 1979; $7.25.

Analysis of Data from the First Wheel Experiment at the Facility for Accelerated Service Testing (FAST), Interim Report, PB-299-433/3GA, July 1979; $4.50.

Recreational Boating Safety Education Methodology, AD-A071-397/4GA, April 1979; $9.50.

Analyst Level Documentation for the Search and Rescue Simulation (SARISM), AD-A073-155/4GA, March 1979; $6.00.

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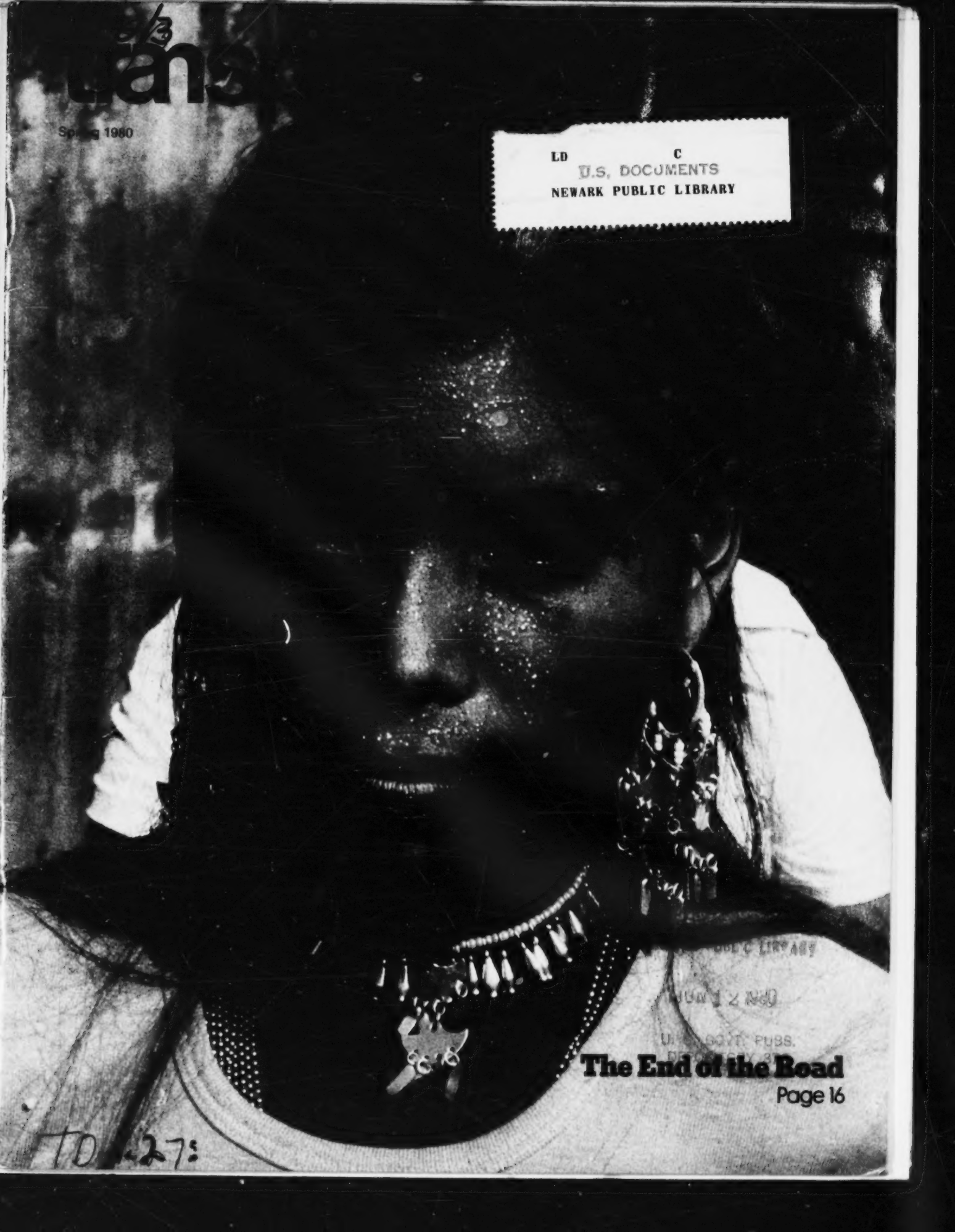

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Photo by Robert Holland

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Photo by Ken Kamins/Sygma

Back cover: DOT's Federal Aviation Administration checks on the safety of aircraft while they are being designed, while they are being built, and each time they are in the air. See story on page 6.

Photo from The Boeing Company

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Autos and Econo

DOT Studies New Realities In the Nation's Auto Industry

By Alan Webber

First there was Chrysler coming to the Administration and the Congress for $1.5 billion to keep the company alive.

Then there was the news of huge North American losses by Ford and reduced earnings by General Motors.

Layoffs began, and soon 175,000 auto workers were off the job and six plants were closed.

In the meantime, imported cars claimed 30 percent of the U.S. market; Japanese cars outsold Ford, Chrysler, and American Motors; Japan appeared ready to produce more cars than this country for the first time in history; and voices were raised calling for import quotas, investment in plants here, or voluntary restraint.

And there was more.

With the auto industry in a prolonged slump, steel companies quickly felt the pinch. Plant closings were announced, and charges of illegal dumping spread as the domestic industry took stock of its competitive position. The rubber industry suffered, too, and, like steel, began to show signs of economic contraction.

The auto industry under assault and in economic recoil.

Hundreds of thousands of workers off the job; dealerships closed; suppliers shut down.

Basic industries—steel and rubber among them—feeling the auto industry's shock waves and suffering from their own problems as well.

What's going on here?

And what will it take to fix it?

Those are precisely the questions Secretary Neil Goldschmidt and the Department of Transportation have been chartered to answer. Both the White House and the Congress, in separate but parallel assignments, have charged DOT with the job of conducting comprehensive studies into the future of the American auto industry and the far-reaching industrial network that makes up the economic base of the country.

Specifically, DOT was commissioned to produce three pieces of work: "The Chrysler legislation enacted by the Congress called for two studies, one a six-month analysis of Chrysler's viability that would assist the government board in its job of managing the $1.5 billion in loan guarantees, and the other an annual review of the overall viability of the U.S. auto industry.

At the same time that the Congress was acting, the White House, growing increasingly concerned over the performance of the auto industry, its interaction with the other troubled industries, and the general condition of the nation's industrial base, called for a far-reaching look at the entire industrial network.

It almost takes a visit to Detroit to appreciate the scale of the problem and to begin to comprehend the immensity of its implications for the economy:

- relatively new buildings sitting idle because the bottom has dropped out of the market for the product they are tooled to produce
- the old, obsolete plants that are too inefficient to operate, too costly to retool, and too vital to the community to close
- the sense of frustration in the communities where there have been layoffs and where the unemployment rate is two or three times the national average
- the sense of concern in the company headquarters where billion-dollar losses are hitting hard and billion-dollar investment plans are being formed in a time of economic uncertainty.

But perhaps the most telling impression is the sense that the pain in Detroit is but a localized manifestation of international developments that not only have changed the auto industry but have also permanently altered the world.

Foremost among these developments is the irrevocable redefinition of the world energy reality, particularly where oil is concerned. For more than 40 years, the American way of life has been premised on cheap and abundant oil, either domestic or foreign. That premise led directly to an auto industry that produced gas-guzzling V-8s and scorned fuel-efficient compacts. And it also permitted sprawling land use patterns and energy-inefficient production techniques in manufacturing—an entire culture and economy where energy cost and availability was simply

mics

not an issue.

The shock of the Iranian revolution, the skyrocketing of oil prices, and the specter of new lines at the pump put an end to that.

In a little over a year—from December 1978 to February 1980—the average price of imported crude oil more than doubled. America's dependence on foreign oil reached 50 percent of total usage. And the dollar drain on the economy soared from $8 billion in 1973 to $60 billion in 1979 to as high as $85 billion in 1980.

Moreover, the Iranian oil embargo demonstrated the effects of political instability in that oil-rich part of the world. Increasingly, the oil imported to America was "hostile"—controlled by nations unfriendly to U.S. policy. Before the revolution in Iran, that country, together with Algeria, Libya, and Iraq, provided roughly one-fourth of total U.S. oil imports. The trouble in Iran pointed out how precarious those supplies could be—a message that was not lost on American consumers concerned about their mobility.

As gasoline prices soared, so did the demand for fuel-efficient cars—and demand for Detroit's full-sized gas-guzzlers dropped. In 1977, sales of full-sized cars in this country held a solid 30 percent of the market. Today, that has shrunk to 14 percent. But, for the most part, U.S. automakers had missed the signals that presaged this market shift. The efforts of the government to encourage the production of fuel-efficient fleets through regulation had been resisted as undue interference in the industry. Moreover, the economics of the industry had always been based on the operating rule that big cars meant big profits, small cars meant small profits.

As long as oil was cheap and plentiful, the rules could apply. Now the rules had changed, and the market had moved—a lot faster than the industry, which requires a three-year lead time to retool, could react.

But not faster than the foreign competition could capitalize on the opportunity.

In Japan and Europe, a world of scarce and expensive energy is nothing new. High gasoline and energy costs long ago were internalized into the economies of those countries; the smaller, more energy-efficient vehicles their automakers produce represent a long-standing recognition of energy realities that Americans have only recently come to appreciate.

Not only were the foreign automakers already prepared with a product line that could respond to the American demand for smaller cars; just as important, they were backed by well-thought-out strategies for national industrial development. In Japan and Europe, the industrial policies that have already been put into effect are significantly different from the traditional relationship between government and industry in this country.

In some nations, the government has taken a direct role in the auto industry as a part owner; in others, government's role is that of a policy-setter and promoter of the industry. But in each instance, there are several constants. Each case demonstrates the value placed on the auto industry by the government as a source of long-term jobs and economic stability for the country. And each clearly proceeds from an assumption that the economic conditions in the world have changed: the economy of the U.S. is no longer the sole controller of international economic policy.

Rather, there is emerging a new international economy that places a premium on productivity, innovation, and exports. The Japanese and Europeans regard the auto industry both as a core element in this new economy and as a means of achieving larger national interests. To do this, exports are vital.

Some statistics will illustrate the shift that has occurred in the world's marketplace:

- Twenty years ago, the United States imported 3.4 million tons of steel, 18 percent of which was Japanese. Four years ago, the amount of imported steel had jumped to more than 14 million tons, 56 percent of which was Japanese.
- At the same time, U.S. production of critical industrial items as a percent of world production has dropped across

Unipholo

Imported automobiles are capturing a larger and larger percentage of the domestic market.

the board in virtually every significant sector of the manufacturing economy. Between 1967 and 1976, the U.S. share of raw steel production declined six percent, aluminum declined eight percent, tires declined six percent, and motor vehicles declined eight percent.

- The U.S. share of world exports has declined as well. Between 1960 and 1979, this country's share of manufactured goods exported declined from more than 25 percent to about 16 percent.
- Finally, the rate of productivity and investment in plant and equipment in this country has not kept pace with those in Japan and Europe. Between 1960 and 1978, the average annual rate of productivity improvement for manufacturing in the U.S. was 2.8 percent, compared with 8.2 percent in Japan and 5.4 percent in West Germany. Between 1960 and 1978, U.S. capital investment in manufacturing as a proportion of the gross domestic product of manufacturing companies was 9.1 percent, compared with 28.8 percent in Japan and 15.9 percent in West Germany.

What these figures illustrate is a changing economic climate in the world. An older, more mature U.S. industrial base is being challenged to compete for world markets by foreign concerns with fresh technology, economies already conditioned to the shock of energy shifts, and strategic plans to capture shares of the market through vigorous export programs.

What this means for the U.S. auto industry, the industrial system that touches it, and the overall economy is a painful period of transition.

With the market gone for large cars, the auto industry is moving as fast as it can to bring out smaller ones—cutting weight off existing models; moving to smaller, more energy-efficient engines; shifting to front-wheel-drive models. But to accomplish this massive shift, the industry is making enormous capital investments—investments made even more difficult because of the lack of sales of the large cars that would otherwise provide the cash flow for the new investment.

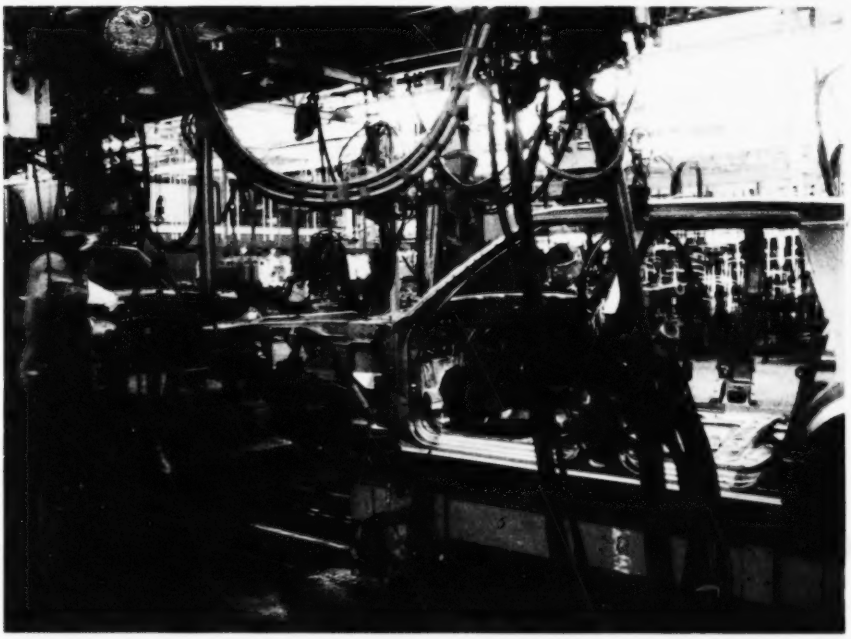
Thus, at the same time that the domestic companies are reporting negative operating cash flows—in 1979, Ford's was $1.1 billion in North America, Chrysler's was $1.5 billion, and Genral Motors' was $.5 billion—they are required to make record capital expenditures.

Between now and 1985, the three domestic automakers will spend roughly $75 billion to retool the industry to make the fuel-efficient cars the market is demanding. That is more than one and a half times what the United States spent on the space program—and the auto transition will come in five years compared with the ten-year period of the space program.

In addition to these enormous capital costs, the auto industry's transition is certain to have sizable impacts on the rest of the industrial network. Today, the auto industry consumes more than a fifth of the nation's steel output and more than half of the high-profit steel; over half of the rubber; one-fourth of the glass; and significant percentages of plastic, aluminum, electronics, and other commodities. Changes in the design and composition of the auto will ripple through these other industries as well.

For example, an estimated 160,000 jobs in the steel and ferrous casting industries depend on the auto industry. According to one projection, changes in the auto to produce fuel savings will eliminate nearly 70,000 of those jobs by 1990.

At the same time, other industries may do well, as the demand for sophisticated electronic equipment or strong, lightweight plastics increases. These boom and bust shifts have importance not only for the affected industries, but also for the communities in which they are located, for the workers, and for the governments at all levels that must respond to the social and economic changes.



Ken Kaminsky/Uniphoto

Many of this country's auto assembly lines will have to be retooled so they can produce smaller cars.

Throughout the next nine months, the Department of Transportation will be working to analyze this complicated set of problems and issues and to produce policy choices that respond to them.

Secretary Goldschmidt has met with concerned community leaders in the hardest-hit steel city, Youngstown, Ohio; with steelworkers at the Republic plant in Warren, Ohio; with auto workers in nearby Lordstown; and with auto industry executives in Detroit.

A Departmental team, now being assembled, will be under the direction of an outside expert who will run the study. In addition, contact points in other federal agencies, in the Congress, and in interest groups are being identified for cooperation and information-sharing.

What will the domestic auto industry and the larger industrial base look like in 1990?

How can its health be assured?

What relationships should the public and private sectors have with each other?

What industrial policies should guide this country in a new era of scarce and expensive energy and international economic competition?

These are the key questions that the Department of Transportation will seek to answer for the Congress, the White House, and the nation.

Alan Webber is a special assistant to the Secretary of Transportation.

The Concerns Of the Auto Workers

On any given day, Marlin B. (Whitey) Ford does just what the chairman of General Motors does: he glances at the front page of the newspaper, then thumbs through it to reach the business section so he can check for news of car sales, stock prices, and other economic indicators affecting the automobile industry.

You would expect the chairman of GM to do this. But Ford is a blue collar worker. Why his interest?

"My job, the jobs of my 10,000 members," he says simply.

Ford, 38, is president of the United Automobile Workers Local 1112 at Lordstown, Ohio, and the ups and downs of the American automobile industry are of vital concern to his union and his local.

The son of a Pennsylvania coal miner, he came to Ohio when General Motors opened its auto assembly plant at Lordstown in 1966. There are some 15,000 auto workers in the huge GM complex, including about 3,000 who work in a body-stamping plant.

Right now, some 1,000 to 1,200 automobile workers are unemployed in this rugged part of Ohio. But it has been worse.

"We lost the second shift in 1976 when the first big crunch came, and that was 2,400 workers. We didn't get it back for a year and a half."

Local 1112 was one of the places Secretary Neil Goldschmidt visited on a fact-finding trip in connection with DOT's review of the automobile and related industries.

Ford says American workers can compete with the productivity of the foreign car makers.

"Your average assembly line workers are more mature now than they were ten years ago. They've got families and mortgages, and they want jobs, and they sure are willing to work."

Certified: Safe and Reliable

By Harold N. Wantiez

FAA Checks New Aircraft From the Drawing Board On

Seventy-five years ago, the airplane was a fascinating novelty, an expensive toy for daredevils.

Today, it is an efficient and reliable public transportation vehicle.

What brought about this change? What convinced people to leave the ground and be hurtled through space in a metal cylinder?

Two things: an impressive string of technological developments, and an equally impressive record of safety through the years.

Safety is not only the stock-in-trade of the FAA, it's one of the principal reasons it was started. The original Federal Aviation Agency was chartered in 1958 largely in response to the public outcry for air safety improvements following a disastrous midair collision over the Grand Canyon in 1956. (The name was changed to Federal Aviation Administration in 1967 when the FAA became part of the Department of Transportation.)

The safety of every plane and every passenger that leaves the ground is the concern of the FAA, and steps to assure that safety begin long before a plane is ready to take off.

FAA's responsibilities begin back at the drawing boards where aircraft are conceived and at the factories where they take shape. Its role continues with jurisdiction over the men and women who dispatch the aircraft from airports, the crews who fly them, the mechanics who maintain them, and other specialists, like parachute riggers and flight instructors.

These responsibilities also include most aspects of flying itself—the airspace, the navigation aids, the federal airway system, and the airports—and the research needed to continually improve the performance and enhance the safety of aircraft (see the article on the National Aviation Facilities Experimental Center on page 12). The FAA also provides security specialists who combat terrorism and hijacking by maintaining an effective air transportation security program.

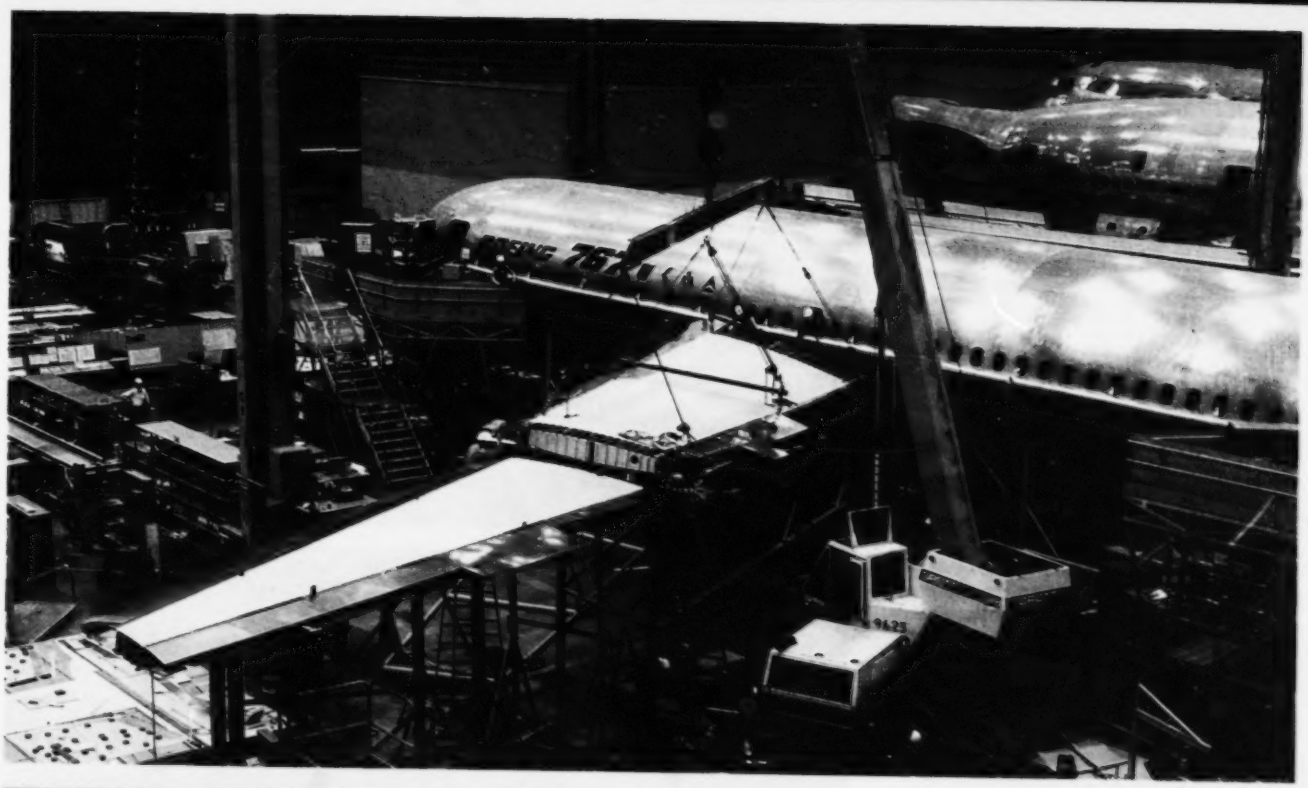
Federal regulations mandate that every kind of aircraft sold to—or used by—the public must be certified to be airworthy by the FAA. This certification process begins early in an aircraft's development.

Before proceeding with a new design, aircraft manufacturers bring their preliminary specifications to the FAA for approval. FAA aerospace engineers then work side-by-side with factory engineers to monitor the preparation of drawings and other data for new aircraft. During the process of design and prototype manufacture, the aircraft must undergo an intense examination to make sure it will operate safely.

Throughout the entire arduous and complicated certification process, FAA and the manufacturers' engineers check the various components—fuselage, wings, landing gear, empennage (tail assembly), and so on—for quality of workmanship and conformance to the design.

After the prototype aircraft successfully passes literally thousands of tests and inspections, the basic design receives, from the FAA region with jurisdiction over that manufacturer, its federal stamp of approval. This "type certificate" certifies that the aircraft complies with the applicable federal regulations. Each subsequent airplane manufactured under this type certificate also receives an "airworthiness certificate," which attests that that individual aircraft is airworthy and conforms to the applicable federal regulations.

Once a manufacturer submits his application to the FAA, that application, along with detailed three-view drawings of the planned aircraft, is reviewed at a "preliminary type board" meeting, attended by representatives of FAA and



Technicians at Boeing's Renton, Washington, facility move the left wing section of a 767 mock-up into position for joining to the fuselage.

the manufacturer. This group determines which federal regulations are applicable and if any special design conditions might be necessary. This meeting results in the establishment of certification criteria, known as the certification base. Preliminary meetings of the type board usually continue over several months.

As detailed design work begins, FAA engineers work closely with the company's engineers to ensure that federal regulations and requirements are satisfied. As they work alongside the company engineers, the FAA engineers constantly monitor and inspect the design and the manufacturing processes.

Both the FAA and the manufacturer spend many thousands of manhours making sure that safety standards are satisfied. As an example, FAA's Northwest Regional Headquarters in Seattle estimates that its personnel will spend more than 20,000 hours over a period of four years in certifying Boeing's new 767.

As the design of a new plane progresses, FAA engineers challenge any features or processes they think may not comply with regulations, and they frequently inspect mock-ups as the process continues to the point where full-scale models can be built.

As the actual parts for the plane are manufactured, they are inspected by FAA's manufacturing inspectors or by company representatives designated and monitored by FAA. Inspectors from FAA also monitor the company's manufacturing facilities and evaluate its manufacturing techniques and quality control programs to determine if the operation can produce satisfactory parts consistently.

Computers have assumed a major role in airplane design and analysis during the last 15 years. Programs for structural analysis, performance, noise prediction, and so on can yield an accurate estimate of a new aircraft's characteristics. As the design is changed, the corresponding trends can be observed and suitable corrections made, if necessary. These data are reviewed by the FAA as part of the "type certification" process.

New aircraft are also subjected to a series of physical tests. One of the most important of these—performed by the manufacturer and witnessed by the FAA—is the full-scale static test to prove the aircraft's structural strength. Hydraulic jacks apply loads to a full-scale model of the airplane, simulating the flight loads that might be experienced. Measurements are made of strains that result from test loads, and corresponding stresses are determined. As this test demonstrates the strength requirements of the aircraft's structure, any weaknesses are noted, and corrective action is taken.

Later on, the completed airplane is shaken by powerful vibrators to measure the dynamic response of the airframe. Calculations using these data help to determine the maximum speed at which the airplane can safely be flown.

Equal attention is given to systems design and analysis. Emphasis is placed on multiple "failsafe" systems so that, in the event of a malfunction in one system, another can take over. All of the many components and systems in the aircraft—including the avionics, hydraulics, pneumatics, and electrical systems—receive close examination.

Wind tunnel tests of a scale-model 767 are conducted in a high-speed wind tunnel near Boeing Field, Seattle.

The day arrives when the new aircraft prototype is rolled out for the first time. Although the plane is not entirely completed, the roll-out is a significant day in the schedule since it signifies the completion of a major milestone. The basic airplane is about ready to fly.

But before that happens, the prototype goes through a series of ground tests. At varying speeds, it is taxied up and down the runways while the pilot tests engine and flight controls and other equipment. When the ground performance measures up to standards, the aircraft gets its first formal FAA approval—an "experimental certificate of airworthiness." It is now ready for testing in the air.

The extensive flight test program usually spans twelve to fourteen months and totals about 800 hours of flying time. First, company pilots take the new aircraft through a carefully planned series of airborne tests; next, they are joined by FAA engineering test pilots who fly the airplane and monitor its performance to make sure it can operate safely under all anticipated conditions.

The prototype aircraft has no interior furnishings; instead, it is filled with equipment that records the aircraft's performance in the air. Flight load surveys are often made. Tanks of water or sandbags are put on board for ballast. By adding, removing, or shifting ballast, test monitors can determine the aircraft's flight characteristics in different weight and center-of-gravity configurations.

The airplane is made to climb in varying attitudes to various altitudes—at times with one or more engines off—and to execute all the standard maneuvers while power is cut back. It is also landed with the engines cut to simulate power failure. Performance is checked, and noise levels are measured.

Crashworthiness—the ability of the aircraft to protect its occupants in a crash—also comes in for close scrutiny during the test phase. Evacuation tests show whether the passenger cabin can be emptied of passengers within a specified period. Careful attention is given to the flammability of materials from which the aircraft's seats, carpeting, partitions, and cabin interiors are made, to be sure they do not burn so quickly that they cut off escape.

If all goes well during the flight tests, the aircraft receives an FAA "type certificate." Once this certificate is awarded and the company's production methods and facilities are found to meet FAA standards, a "production certificate" usually follows, and the manufacturing of the new aircraft can begin.

But the regulatory job does not stop there. FAA inspectors continue to monitor production, and FAA engineers study reported service problems, if any, to determine whether special action must be taken to ensure airworthiness.

After the new plane is in service, FAA maintenance inspectors continually oversee the maintenance activities of the airline or individual operator. Special groups monitor and evaluate aircraft operations both in the air and on the ground. A "flight operations

FAA propulsion specialist Dan Chaney, left, goes over engineering drawings with three Boeing airworthiness engineers—Stan Cervenka, George Kellogg, and Larry Craig.

An FAA engineering test pilot, Earl Chester, tries out the cockpit mock-up of the new Boeing 767.

evaluation board" made up of FAA specialists and airline flight operations personnel meets regularly to establish minimum equipment lists and to review operating procedures. A similar "maintenance review board," which includes both FAA and airline maintenance specialists, meets to review and approve maintenance programs and procedures for each airline.

If the aircraft undergoes any modification, it is subjected to additional engineering and manufacturing inspections by FAA engineers. For example, it is common practice to modify aircraft in order to provide new features, such as different galley arrangements. However, FAA manufacturing inspectors must approve the initial design of the modification, the engineering, and the final installation. These inspectors make sure the work conforms with the approved engineering drawings and that the workmanship is satisfactory.

During an airplane's useful lifetime, service problems sometimes come to light. Cracks, for example, may form in structural members after a certain period of time. If there is no safety problem, the manufacturer will publish a recommended repair procedure in a booklet called a service bulletin. However, if the cracks should be considered a safety problem, the FAA issues an airworthiness directive, which requires inspections or repairs within a specified time. These airworthiness directives are legally binding on U.S. operators. They are not binding on foreign operators, but most foreign aviation authorities make them mandatory in their countries as well.

The same close attention that the FAA gives to the airplane itself is also given to the human aspects of flight. Flight crews must regularly pass rigid physical and proficiency examinations. Any of a number of physical or mental deficiencies, including psychotic disorder, chronic alcoholism, drug addiction, epilepsy, and coronary disease, are grounds for denial of the required medical certificate.

Crew members who hold current FAA medical certificates are considered to be in top shape both mentally and physically, and FAA inspectors monitor airline flight crews to make sure their flying skills remain at a high level.

Airline maintenance personnel are also examined and licensed by the FAA before they are authorized to "sign off" for repair work done on their airline's aircraft.

The purpose of all these checks and crosschecks by the FAA is safety—to assure each person who boards a plane in the U.S. that his or her trip will be as safe as this country's regulatory procedures can make it. However, the Department of Transportation recognizes that it is wise to take a look at those procedures from time to time.

Regardless of how well-meaning the intent of a regulation may be, if its effect is to decrease safety, it is undesirable. Equally undesirable is a regulation that reduces the efficiency of the transportation system, but does not provide an increase in safety. A regulatory agency that avoids both of these side effects is operating effectively. However, the agency's effectiveness must continuously be reviewed and, if possible, improved.

One way to accomplish this is to

During this static testing of a 747 wing at Boeing's Everett, Washington, plant, the test loads applied far exceeded those experienced during normal flight.

Photos from The Boeing Company

invite a critical examination by a third party. This may result in the identification of weak spots so improvements can be made. Such audits, carried out by competent professionals, can be a very useful source of constructive suggestions.

FAA's certification process has been the focus of public and Congressional attention in recent months, following the DC-10 crash in Chicago. Two bills have been introduced in Congress calling for the establishment of a Type Certification Board consisting of representatives of corporations, associations, government agencies, and other individuals possessing special knowledge and expertise in the fields of aeronautics and aviation safety.

Meanwhile, Secretary of Transportation Neil Goldschmidt has asked a blue ribbon panel of experts of take a thorough look at the whole certification process. Goldschmidt sees the work of this panel as one of the Department's top priorities.

In testimony before a Congressional committee looking into the DC-10 crash, FAA Administrator Langhorne Bond said:

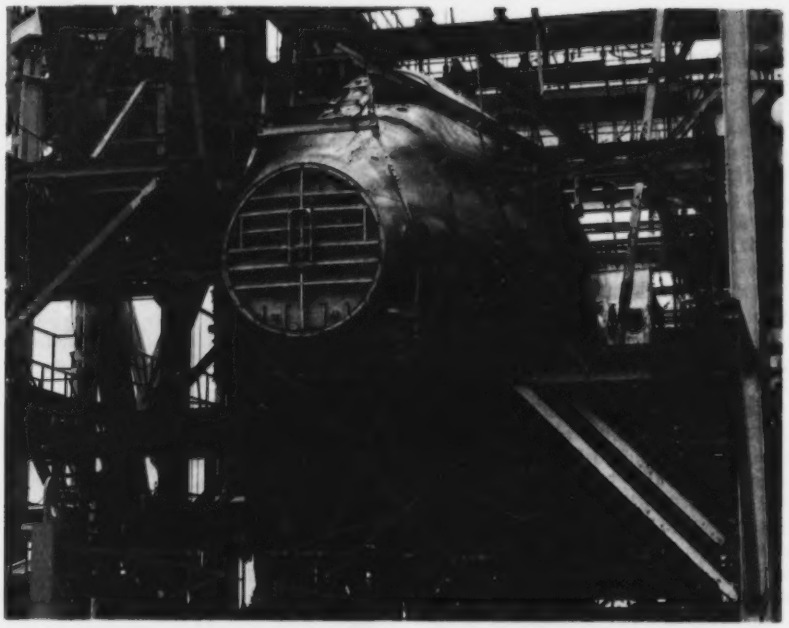
"The U.S. aviation safety record, I believe, clearly demonstrates that the aviation community works long and hard to prevent accidents from happening. But it is also clear that airworthiness directives are seldom newsworthy; that only an occasional rulemaking activity meets the public eye; that most are unaware of our electronic technicians who, at all hours of the day and in all weather conditions, are calibrating or repairing navigational equipment in remote areas throughout the country; that few people, other than pilots, know of our safety clinics that are held continuously; and that our ongoing research and development programs to improve safety are rarely in the public spotlight.

"The list of continuous safety activities carried out in relative obscurity by the FAA goes on and on.

"I think it's important for the American public to recognize that the mere fact that our day-to-day efforts to promote aviation safety may not be well-known or publicized does not mean that we do not do all we can to protect the public welfare by preventing accidents from happening."

Harold Wantiez is an aerospace engineer with the engineering and manufacturing branch of the flight standards division in the Federal Aviation Administration's Northwest Regional Headquarters in Seattle.

Before earning its wings, this Boeing 747 is having its structure tested in a "torture rack."



Taking the Lead In Certification

In an effort to improve FAA's management of the certification process, FAA Administrator Langhorne Bond recently ordered the establishment of "lead regions" to take responsibility for specialized certification functions for aircraft, propellors, and engines. These functions were formerly handled at a number of FAA's different regions.

Under the new system, a region in which the staff has a lot of experience with a certain phase of aeronautical certification will be the lead region for the entire FAA in that area of expertise.

The Central Region, headquartered at Kansas City, Missouri, the home of many large manufacturers of light aircraft, will be the lead region for matters pertaining to airworthiness standards for small aircraft.

The New England Region, where Pratt & Whitney and small General Electric engines are manufactured, will be the lead region for aircraft engine certification. New England also has been designated as the lead region for certification of all domestic turbojet engines of 15,000 pounds thrust or greater and for all foreign engines.

The Southwest Region, home of Bell Helicopters, is assigned the certification of both heavy and light rotorcraft.

The Western Region, headquartered in Los Angeles near the McDonnell Douglas and the Lockheed Aircraft manufacturing plants, will retain its certification responsibility for those companies, and the Northwest Region offices located at King County International Airport in Seattle will continue to be responsible for aircraft produced by The Boeing Company.

There's Safety in Computers, Vortex Sensors, Transponders, And Wind Shear Alert Systems

FAA's Experimental Center Moves to a New Building

By Betty Moschella

For 21 years, the Department of Transportation's National Aviation Facilities Experimental Center has been coming up with ways to make air travel safer.

During all that time, however, it has had to operate out of 180 dilapidated buildings, put up during World War II, that sprawl over a 5,000-acre former naval air station ten miles northwest of Atlantic City, New Jersey.

Now the center is moving into a new 516,000-square-foot technical and administrative building that will replace more than 30 of the old "temporary buildings" constructed in 1942 and 1943. The new $50 million headquarters has been completed two months ahead of schedule and at a cost below the budget estimates.

Last September, at a groundbreaking ceremony at NAFEC, President Carter spoke into a voice-activated computer that detonated an explosion to symbolize the beginning of construction of the long-awaited building.

The President told a crowd of 8,000 that "this facility has led the way in development of new technologies for civilian air flight, which have given our nation the safest possible record in the air of all modes of transportation.

"Its experiments here have made possible innovations in such areas as crash techniques, rescue techniques, fire safety, airway-runway designs, lighting systems, structural stress, also wake turbulence, radar, and many others of a similar benefit to the American people."

The new facility, the largest of its kind in the United States, houses modern laboratories and $100 million worth of computer equipment designed to help develop new methods of making air travel even safer.

Air traffic control, the backbone of the Federal Aviation Administration, is NAFEC's single largest area of activity, and the center will continue to be very busy working on new ways of dealing with the tremendous growth of air traffic in the United States.

From the time an airliner leaves the ground, it is monitored by radar and its flight closely observed by air traffic controllers all along its path. As the plane leaves the terminal's air space, usually about 30 miles out, the airport controller "hands off" the flight to a controller at one of FAA's 20 en route centers across the country.

These en route centers have hundreds of controllers, each monitoring a particular sector of air space. Several controllers may be responsible for different altitudes of the same sector. As the aircraft travels from sector to sector, one controller hands off the flight to another until finally the aircraft enters the air space of the airport to which it is headed. There it is handed off for the last time to the radar approach control facility and is guided to the ground.

The systems that provide information to these controllers—such as the computerized system that flashes a block of information on the controller's radar screen showing the identity of the aircraft, its altitude, and its air speed—are the kinds of things the people at NAFEC develop and test.

Before a system leaves NAFEC to be installed across the country, it is thoroughly checked and rechecked. This testing is carried out in special laboratories where all kinds of air traffic conditions can be simulated, or acted out, exactly as they would be at a particular time in a particular place. Here, air traffic controllers sit in front of radar screens and test new systems or modifications to old ones by creating the same conditions the systems will be exposed to in actual use.

"New concepts, procedures, equipment, and systems originate in many different places," says NAFEC's Director, Joseph Del Balzo, "but if they are ever to become part of this country's civil aviation system of tomorrow, they must first be developed or tested today at the National Aviation Facilities Experimental Center."

At any given time, NAFEC's staff of 1,500 is at work on more than 200 projects involved with the long-range development of ways to improve air traffic control and aviation safety.

After Dedication, NAFEC's Name Will Be FAA Technical Center

FAA's National Aviation Facilities Experimental Center plans to dedicate its new headquarters building on May 29 with a ceremony and an open house for the aviation community, Department of Transportation employees, and the general public.

On the day of the dedication ceremony, NAFEC will officially become the Federal Aviation Administration Technical Center. The new name was chosen by FAA Administrator Langhorne Bond as a way to reflect better the research center's mission and function.

Other special events to be held during the week of May 26 include the inauguration of a new operational and research heliport and the opening of a 7,200-square-foot Visitors' Center in the new building. There also will be displays of aircraft on the ground and flight demonstrations toward the end of that week.

The New Visitors' Center will use displays and audiovisual presentations to tell the story of the FAA and the Technical Center.

One such project is the Discrete Address Beacon System, known as DABS, which may make today's radio chatter between pilots and air traffic controllers seem primitive by comparison. The system uses ground radar equipment and computers in conjunction with a sensor box or transponder and a cathode ray tube display in the cockpit of the plane.

The transponder emits its own "discrete" call sign, which is picked up by radar and flashed on the controller's radar scope at the center or terminal. Because it is different from all others, the signal is readily identifiable. The call sign can then be stored in the computer, where it can be called up when needed. This ability to store signals results in less overlapping or garble on the controller's screen. The computer simply sends the pilot the information he or she needs to know. Such things as collision avoidance and altitude warnings, airport advisories, and weather information are flashed on the cockpit display rather than being relayed by radio.

The FAA expects to have the DABS system in use across the country by 1984.

The Beacon Collision Avoidance System (BCAS) is another system under development in the labs at NAFEC (see "Sorting Out the Crowds in the Sky" on page 18 of the Winter 1979 issue of *Transportation USA*). This system also uses transponders, but with BCAS, the signal from a particular aircraft can not only be picked up by ground radar, but also be flashed on the cockpit display of nearby aircraft, thus informing other pilots in the area of the signalling aircraft's whereabouts, altitude, speed, and identification. The first aircraft also receives like information about the other planes close by.

The Minimum Safe Altitude Warning (MSAW) system alerts controllers who in turn alert pilots when their aircraft are too close to obstacles on the ground. MSAW automatically compares data received from an aircraft's altitude reporting equipment with topographical data stored in air traffic computers.

All of the en route and terminal centers throughout the U.S. that provide pilots with data from takeoff to landing rely extensively on computers and computer programs to perform most functions automatically. But all the information must first be fed manually into the computer. A computerized voice recognition system, similar to the one used by

These colored swirls of smoke, caused by a plane that has just flown by, helped FAA engineers find out what an aircraft's wake vortex looks like.

President Carter during NAFEC's groundbreaking ceremony, is being designed, tested, and evaluated at the center. When it is implemented, data can be entered into a computer by voice, thus freeing the controllers' hands and eyes from the keyboard.

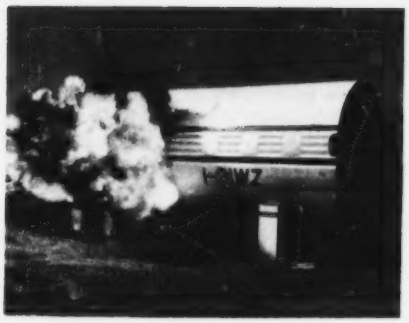
NAFEC pilots and engineers spent a lot of time testing a new microwave landing system, the result of a $100 million research program conducted jointly by the U.S. and Australia. The Time Reference Scanning Beam Microwave Landing System (MLS for short) was chosen by the International Civil Aviation Organization in April 1978 as the new international standard. Before that choice was made, NAFEC personnel flew 600,000 miles to eight countries on five continents to demonstrate the system.

MLS will eventually replace the old Instrument Landing System, or ILS, that has been in use since 1949. ILS requires all aircraft to enter the runway single file from one direction. By sweeping a large funnel of airspace, MLS makes possible a number of alternate landing approaches, even curved approaches. The new system increases airport capacity by permitting closer spacing of aircraft and the use of parallel runways. Because the system can bring aircraft in from higher altitudes and on steeper glide slopes, it helps to reduce noise near airports. MLS can handle routine operations in any kind of weather and can be used at many sites that couldn't accommodate ILS.

As an aircraft lands, it leaves turbulence, called wake vortex, in its path. This turbulence causes problems for aircraft landing one after another through the same airspace, as is required by the ILS system. NAFEC engineers came up with an ingenious way of studying wake vortex. They found a method of emitting streams of smoke in different colors from the sides of a tall tower. By filming the colored swirls created when an aircraft flew by the tower, they were able to collect data on what these vortexes look like.

They were then able to develop the Vortex Advisory System, which keeps air traffic controllers advised of wake turbulence on a runway. When necessary, the controllers adjust the distance between aircraft landings. This information is given to the controller by a simple light display. When only three nautical miles of separation are needed between aircraft, the lights are green. If conditions require four to six nautical miles of separation, red lights replace the green.

In 1975, an airliner crashed on approach to JFK International Airport, killing 115 people. The probable cause was a sudden, violent wind shift at ground level caused by a rapidly moving weather front. A new Low-Level Wind Shear Alert System, developed at NAFEC, is now being installed at many U.S. airports. This computerized system



Left, this explosion was part of a test to determine the least risky location to place explosives found aboard a plane in flight.

Right, the new headquarters building for FAA's technical center has been completed ahead of schedule.

Below, President Carter spoke at the groundbreaking for the new building last fall.

is composed of wind sensors placed at strategic locations around the airport and at its center. These sensors record differences in wind direction and force and flash an alert to controllers when a dangerous condition exists.

These examples are but a sampling of the things that have been done—and are being done—at NAFEC. There are scores of other research, development, and test projects, involving such things as route structures, airport capacity, navigational aids, runway lighting and traction, fuel conservation, and control tower design and modernization.

"The air traffic control system in the United States is the most advanced, the most efficient, and, without question, the safest in the world," NAFEC Director Del Balzo says. "It didn't get that way accidentally. It came about through careful planning and hard work."

While NAFEC has made its impressive achievements while housed in a motley collection of outdated buildings, it is fitting that in this 21st year—a year of coming of age—NAFEC should move into its own modern complex.

The way NAFEC got this building is an interesting story. Rather than constructing its own building, the federal government decided to lease a building financed locally. The financial agreement was made between the Atlantic County Improvement Authority and the Irving Trust Company of New York and the Prudential Life Insurance Company of Newark, New Jersey.

Irving Trust financed the building through its construction phase. After the initial certificate of occupancy was issued in January, Prudential purchased a $40.5 million bond, the proceeds of which were used to repay Irving Trust's construction loan. The Federal Aviation Administration will pay $5.2 million a year to lease the building,

owned by the Atlantic County Improvement Authority.

"The lease is written so that once we start making payments, which we are now doing, we must continue to pay rent for 20 years," says Thomas F. Brennan Jr., manager of NAFEC's building program management staff. "At the end of that time, when the lease is paid, we get title to the building. What we are doing is getting a building on the installment plan."

Energy conservation was an important consideration, Brennan says. "A 1975 Executive Order specifies that buildings must improve over a period of ten years to reach a 45 percent savings in energy use by 1985. What we have already is something close to 60 percent.

"First of all, we generate so much of our own heat with our computers. They are all in one place, in one well-insulated building, and we are able to capture all that heat and recycle it through the heating system."

NAFEC's computers—$100 million worth of sophisticated equipment—are at the heart of the building, occupying a two-story section of the new complex. Each floor contains a computer lab as large as a football field, including the end zones.

"We are not going to require any auxiliary heat at all unless the temperature drops below ten degrees," Brennan says. The heat generated by the computers will also help provide energy to operate the air conditioners during the summer.

"Most important," says Del Balzo, "is the fact that the new building will allow us to expand our laboratories to meet the growth and complexity of the future air traffic situation and to adapt efficiently to changing requirements.

"We must be able to meet future demands in all areas of aviation—not just commercial airliners, but also general aviation, helicopters, and the rest. We must be able to test all facets of the air traffic control system, separately and as a whole, here at NAFEC.

"Keeping the safety of the system paramount in our minds," Del Balzo concludes, "we have gone to great lengths to make sure these laboratories are adequate to meet the challenges that will face this new technical center during its next 20 years—and beyond."

Betty Moschella is on the staff of the public affairs office at the National Aviation Facilities Experimental Center.

major actions at DOT

This column periodically summarizes the major Department of Transportation actions, decisions, and legislative recommendations.

October 11, 1979. Secretary Goldschmidt announces that agreements by DOT and the state of California with plaintiffs in a ten-year-old lawsuit have cleared the way for construction of the 17.2-mile Century Freeway in Los Angeles. DOT has agreed to a plan that will relocate, rehabilitate, or replace up to 4,200 housing units.

October 22. DOT proposes a rule that would prohibit the Department or any state or local agency from restricting participation in DOT-funded programs on the basis of a person's age.

October 23. On behalf of the nation's independent truckers, Secretary Goldschmidt sends a letter and a report to President Carter urging the immediate enactment of authority to impose temporary national truck weight limits of 80,000 pounds in times of fuel emergencies.

October 26. President Carter announces the creation of a National Task Force on Ridesharing as part of the Administration's plan to save fuel by encouraging better use of automobiles.

November 15. Secretary Goldschmidt approves a request by Ohio Governor James Rhodes to remove a 7.9-mile segment of the proposed Cleveland Clark Freeway (I-490) from the Interstate Highway System. Federal funds equivalent to the estimated cost of the segment—$147.86 million—will be made available for substitute highway and transit projects in the Cleveland area.

November 21. DOT's Urban Mass Transportation Administration announces the awarding of $278,897,000 in grants to the New York City metropolitan area for improvements in public transportation. The 25 grants will be used for building and modernizing rail, bus, and ferry operations.

November 21. Joan Claybrook, head of DOT's National Highway Traffic Safety Administration, asks the nation's governors and 850 mayors and county executives to begin an all-out attack on the problem of drunk driving.

November 29. Secretary Goldschmidt turns down the building of a 13.5-mile section of Interstate Highway in suburban Dayton, Ohio, because it would conflict with President Carter's urban policy by taking jobs and business away from the city. However, he approves a shorter section of the highway—I-675—that he says is a logical connection with existing roads.

December 7. Secretary Goldschmidt transmits proposed legislation to Congress to provide $750 million in additional authorizations for completion of the Northeast Corridor Improvement Project.

December 19. Secretary Goldschmidt asks the National Academy of Sciences to appoint a panel of experts to evaluate the way the Federal Aviation Administration regulates the safety of aircraft design, production, and maintenance.

January 4, 1980. DOT announces that an agreement between the United States and Canada to delay the closing of the St. Lawrence Seaway allowed more than 15 million additional bushels of U.S. and Canadian grain intended for export to move through the Seaway in the final six days of the 1979 navigation season. The grain was valued at more than $53 million.

January 8. Secretary Goldschmidt curtails Soviet fishing activities in U.S. waters in response to "armed Soviet aggression" in Afghanistan.

January 15. Secretary Goldschmidt says that President Carter has asked him to head a government-wide review of the auto industry and its "broad industrial network." Goldschmidt says the health of that auto-related network is crucial to the role of the United States as a manufacturing and exporting country.

January 24. FAA announces that a six-month study has found that the DC-10 pylon is fundamentally sound and can serve 25 years without failure unless damaged during maintenance. FAA is proposing mandatory modifications to the DC-10 pylon to prevent the kind of maintenance-induced damage that led to the crash of a DC-10 at Chicago's O'Hare Airport.

January 28. DOT announces proposed regulations requiring trucks that carry radioactive materials to minimize travel times and to avoid heavily populated areas, traveling only on "preferred" highways—Interstate highways or alternate highways selected by the states.

February 11. The Urban Mass Transportation Administration announces proposed guidelines for a federally-funded transit bus rehabilitation program, which would extend the service life of buses from 12 years to at least 17 years.

February 14. The Federal Aviation Administration publishes a final rule to implement section 30 of the Airport and Airways Development Act, which requires affirmative action in employment at airports receiving federal funds.

March 9. DOT announces that the Uniroyal Tire Company will recall an estimated two million passenger car steel-belted radial tires—the second largest tire recall in history. The decision came after DOT's National Highway Traffic Safety Administration made an initial determination that some tires made by Uniroyal contain a safety-related defect.

March 14. DOT awards a grant of $120 million to Buffalo, New York, for the final design, construction, and purchase of vehicles for the city's light rail system. This grant brings federal funding for the 6.4-mile system to $212 million.

March 17. FAA Administrator Bond announces that he has signed a rule establishing a new safety zone around San Diego's major airports to provide air travelers with increased protection against midair collisions.

March 24. DOT's Saint Lawrence Seaway Development Corporation and the St. Lawrence Seaway Authority of Canada open the 1980 navigation season on the St. Lawrence Seaway. This is the earliest season opening on record for both the Montreal-Lake Ontario and the Welland Canal sections of the Seaway.

March 31. Secretary Goldschmidt announces a uniform program for increasing participation by minority and women-owned enterprises in financial assistance programs of the Department of Transportation. Under the rules, most recipients of DOT grant funds will have to submit affirmative action programs to DOT for approval. These plans must include goals for the use of minority business enterprises.

April 3. DOT's Federal Railroad Administration announces the beginning of a $343 million work season on the Northeast Corridor Amtrak line between Boston and Washington, D.C. This year's construction schedule includes route realignments; track improvements; rehabilitation of bridges, tunnels, and service facilities; design of signaling and traffic control; and station improvements.

The Pan American Highway

From Alaska to With a Gap in

Chile–Panama

By Robert Holland

Photos by Robert Holland

Opposite page, some of Panama's Cuna Indian women wear the same colorful "Mola" costume that women of the tribe wore when Balboa passed through.
Right, the Darien Gap in the jungles of Panama is the last obstacle to the completion of the Pan American Highway.

Swooping wide over the Chucunaque River, the helicopter pilot picked out a clearing at the edge of Yaviza in Panama's Darien Jungle.

Below, the villagers could be seen running along a dirt path toward the landing site, 30 miles north of the Colombian border. Yaviza is a curious mixture of primitive and modern, but even in 1980, five Air Force "Huey" helicopters are not the usual afternoon visitors.

The Hueys brought the U.S. Secretary of Transportation, the U.S. Ambassador to Panama, the Panamanian Minister of Foreign Affairs, and a couple dozen aides to inspect the route of the Pan American Highway, which now ends abruptly in the Darien rain forest but will one day thrust Yaviza irrevocably into the 21st Century.

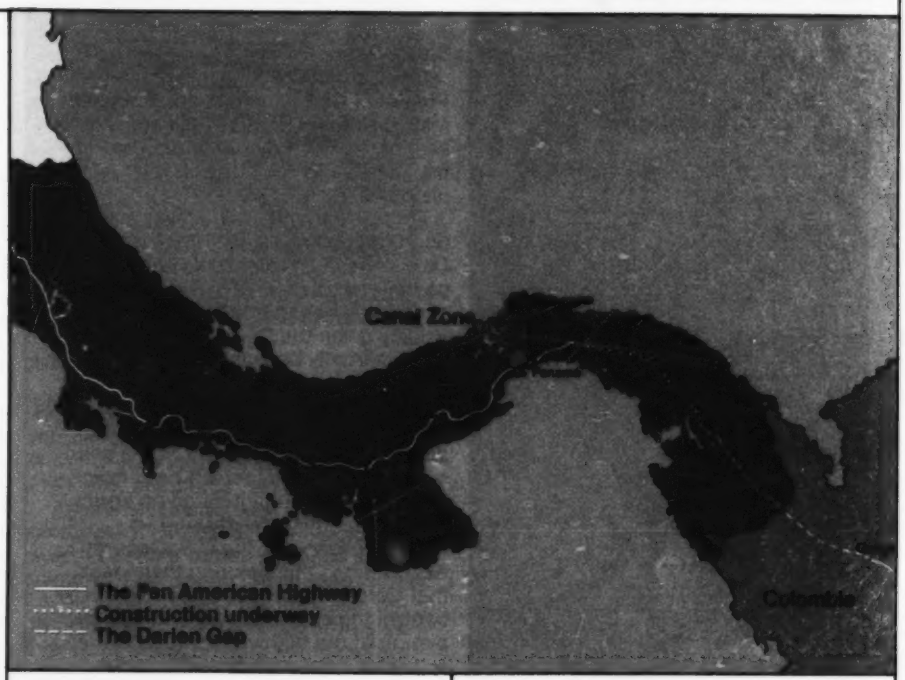
On the way south from Panama City, Bob Powers, the embassy public affairs officer, had said of the thin white ribbon of highway below that runs uninterrupted from Prudhoe Bay, Alaska:

"You've always wondered where it is. Now you're looking at it—'the end of the road.'"

The Darien Gap is the last remaining obstacle to the dream of a highway linking the Americas that has been pursued by the United States and 17 of its neighbors since 1923. Past the Gap, the highway continues all the way through South America.

Jorge Loré, executive director of the Pan American Highway in Panama, fidgeted impatiently, ready to spring out, as the helicopter touched down in marshy grass and quickly rose again, the pilot unconvinced of the firmness of his jungle pad.

"There's another clearing—on the north end of the village," Loré shouted above the engine roar, and the pilot followed his directions.



We soon learned that Loré was a favorite son of Yaviza, selected by village elders years ago as a bright and promising student who deserved higher education.

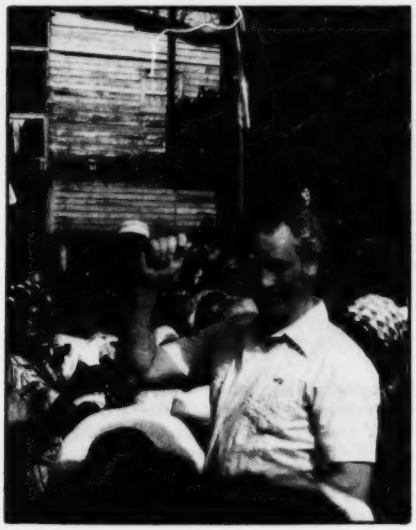
"I used to work here with my father," he said. "He had a business carrying bananas and whatever by boat up the river."

This river is Yaviza's lifeline during the seven-month rainy season from May to November. Then, the village can normally be reached only by water. A dirt road is impassable and flying in hazardous.

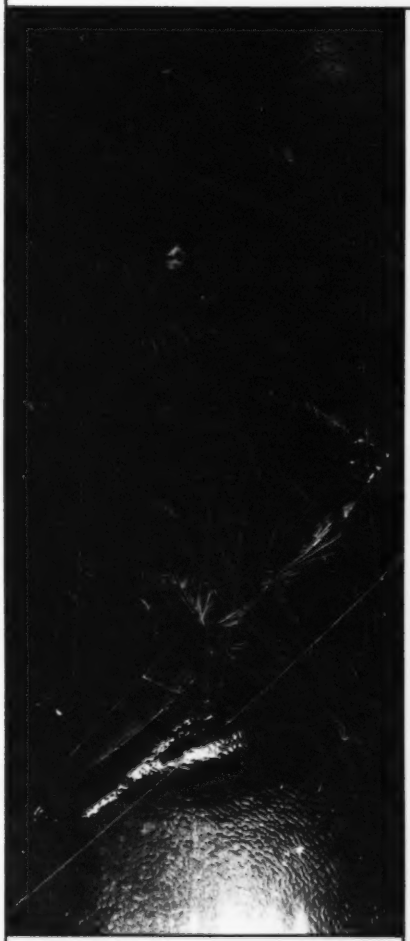
As recently as 1959, a Pan American Union publication said of the area: "Through the dense, steaming jungles of Darien, inhabited only by primitive Indian tribes, a route [for the highway] has not yet been surveyed."

It was a surprise, then, to see in Yaviza a prosperous community with a movie theater and the signs of Coke and Kodak, where women with hair curlers and "Saturday Night Fever" T-shirts live a few yards from Indian mothers who wander about in topless sarongs and hammer grain with wooden mallets.

Banners strung across dirt paths welcomed "Secretario" Neil Goldschmidt and the "Embajador" from the United



Secretary Neil Goldschmidt joins in the dancing that welcomed him to the village of Yaviza in Panama's Darien Jungle.



During the seven-month rainy season from May to November, the only sure way to get to Yaviza is by the Chucunaque River.

States Ambler Moss Jr.

Goldschmidt, who was in Panama as President Carter's representative at the festivities marking the 100th anniversary of the first attempt to dig the Panama Canal, was of particular interest to his hosts.

Foremost in their minds was a resolution of the impasse over financing the Darien Gap. Congress has refused to pay the normal two-thirds of the construction costs that the U.S. has previously given the Central American nations, partially because of a dispute over hoof-and-mouth disease.

The disease prompts jokes among North Americans—one member of the party said it reminded him of the political season he had just left back home—but its devastating effect on an agricultural economy is deadly serious.

Some observers, the U.S. General Accounting Office among them, fear that Colombia has not done enough to control the cattle disease and that completion of the highway through Darien will allow hoof-and-mouth to move north into Panama, Mexico, or even the United States.

In 1971, the U.S. signed agreements with Panama and Colombia to complete the Darien Gap to a point across the treacherous Atrato Swamp in northern Colombia. Four years later, environmental groups—including the Sierra Club and the National Audubon Society—filed suit in Federal Court to require that the Federal Highway Administration produce an environmental impact statement on the Darien project. An injunction was granted, and in 1976 the environmental report was issued by FHWA.

After further legal skirmishing, the U.S. Court of Appeals ruled in favor of the government.

Congress, however, has been reluctant to include Darien Gap funding in the federal budget until uncertainties—particularly about hoof-and-mouth—are resolved.

It was against this background that Jorge Loré briefed the visiting delegation earlier in the day at the Panamanian work camp along Rio Ipeti, halfway between Panama City and Yaviza.

Outside, a Cuna Indian mother and daughter—noses pierced with golden rings and wearing the same colorful "Mola" costume that women of the tribe wore when Balboa tramped through Panama—were sitting by the side of a concrete bridge over the Ipeti, selling oranges from a basket. In the rustic dining hall, laborers ate their lunches at wooden benches as the executive director outlined the promise and frustrations of the Darien project.

"Is it right," asked Loré, "to penalize Panama when we have worked so hard to eradicate the hoof-and-mouth disease?" He urged the U.S. delegation to push for an early resumption of funding by the Congress.

Secretary Goldschmidt asked how long it would take to complete the highway. Probably eight years, replied John O'Marr, the FHWA's regional executive officer. Why so long? the Secretary persisted.

Two reasons, said O'Marr, who has spent 28 years supervising construction projects from Anchorage, Alaska, to Bogotá, Colombia.

First, although Darien will be "routine jungle construction," the dry season allows only four or five months a year of effective work time in the rain forest. And second, the Republic will be devoting much of its energy and skills in the coming decade to taking over and successfully operating the Panama Canal.

So, one hundred miles of jungle and swamp stand in the way of a highway of friendship that will one day permit the hardy tourist to drive from Alaska to the tip of South America.

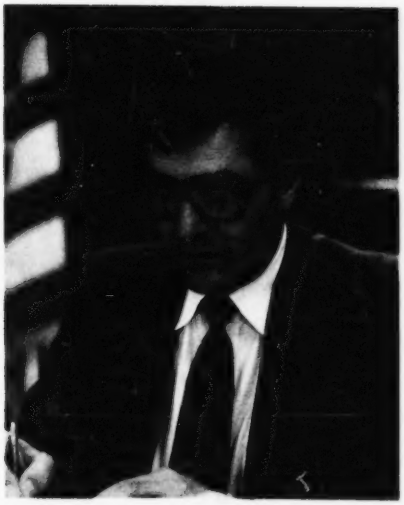
Secretary Goldschmidt promised his hosts that he will work with the State Department and the Congress to overcome the financial obstacles.

In the meantime, Panama doggedly chips away at the awesome task of clearing and grading a historic pathway.

"You have to understand," said Jorge Loré, "we have suffered terrible delays because of things beyond our control." His eyes say that he will persist. Darien will be conquered. The road will be built.

Robert Holland is Director of Public Affairs for the Department of Transportation.

More of the New Team



Eugene Amato

Alinda Burke

The new team at DOT continues to take shape. Here are interviews with six more members of the team.

Eugene Amato

All the way from San Jose, Eugene Amato has come to the Department of Transportation's National Highway Traffic Safety Administration to be its second in command.

Amato was a senior financial analyst for the National Semiconductor Corporation's Strategic Planning Group in California when he began working as a consultant to Secretary Goldschmidt in August 1979. He was named Deputy Administrator of NHTSA in March.

Asked about NHTSA's current policy on auto safety, Amato says, "The policy has not changed significantly from the previous administration at DOT; it's the emphasis that has changed."

While some people have interpreted comments by Secretary Goldschmidt to mean that he would not regulate the auto industry any more, Amato says that is not the case. "The Secretary is embarking on a concerted effort to improve the government-industry relationship. We recognize that there is a move against too much government regulation, and we want to cooperate with the auto industry without sacrificing safety standards that save lives."

Amato is satisfied with the general direction of NHTSA's activities, but he sees a need for better-informed consumers. If consumers believed strongly in the need for safer automobiles, he thinks their demands could have a tremendous effect on auto manufacturers.

Amato, who works with NHTSA's regional administrators, expects to visit each of the ten regions to discuss safety matters with the representatives. All of the states already have easy access to research information compiled by NHTSA, and many of them have received funds for special projects. In DeKalb County, Georgia, for example, a research project is underway to determine if driver education makes a difference in terms of driver safety. According to Amato, the information gathered so far shows that such driver training does have a positive effect on safety.

His work has taken him to some exotic locations. After joining the Fairchild Corporation in 1969, he was made manager of their manufacturing and engineering operations in Mexico in 1972. Later, while he was with National Semiconductor Corporation, he was responsible for manufacturing operations in Thailand, Malaysia, and Indonesia.

Some of the hobbies he has collected along the way are photography, archery, biking, and gourmet cooking—"with all the paraphernalia."

Alinda Burke

Alinda Burke, a special assistant to the Secretary, has some important things going for her. She has a lively personality, she learns quickly, and she knew all the DOT routing symbols when she came here in January.

Just three years after finishing graduate school in 1971, she had worked her way up to the position of manager of government relations for Seattle's public transit and sewage treatment agency. Later, her duties were enlarged to include public relations and citizen participation.

She came to Washington as transportation project director for Public Technology, Inc., a non-profit urban research firm, and later became a vice president. That's where she learned the mysteries of DOT's organization.

In that firm from 1975 to 1979, she worked on the transportation research needs of the nation's largest cities and counties and created programs to use technology to meet those needs. She helped local officials carry out efforts to improve transit productivity, to promote joint development transportation projects, and to give priority treatment to high-occupancy vehicles. Several of the projects she administered were funded by DOT.

In her new job, Burke works mainly with Deputy Secretary William Beckham. When a proposal or decision paper is sent to the Secretary, it is reviewed first by Beckham. "Often there are unresolved issues, and we have to call a meeting to clarify positions and resolve disagreements," she says.

She also works on a variety of internal management duties for which the Deputy is responsible.

Burke enjoys the give-and-take of dealing with the people at DOT. "I make a lot of phone calls," she says.

"I think the biggest challenge and the most exciting part of coming to a big bureaucracy is finding the people who are doing the work, encouraging them, and learning from them."

She helped coordinate the preparation of the Departmental Agenda, a compendium of issues requiring the Secretary's action that need to be completed this year.

"The agenda can be a useful management tool," she says. "It lets the Department know which issues the Secretary feels are most important, and it gives the operating administrations an oppor-

tunity to tell the Secretary what they see as their top priorities."

Martin Byrne

Martin Byrne, who likes to think of himself as the labor unions' "Mr. Inside" at DOT, says he just wants the unions to know "they have a good friend here."

Byrne, the special assistant to the Secretary for labor affairs, has a particular fondness for the group he wants to reach.

"I'm a union man," he says with pride.

Officially, Byrne will act as the liaison between the Secretary and the unions. "I don't see any problem in both being a union person and being loyal to my boss," he says. "I think the two are compatible."

As Byrne tells it, his family is still "in shock" that he left home—and so are the unions. "At home, I'm a big fish in a little pond; down here, I'm just a little fish in a very big pond."

Nevertheless, from all outward signs, the union man at DOT seems eager to get on with the job he came here to do.

"The Secretary is the type of person who wants to get things moving," says Byrne. "That sounds like a pun, but he is a person who doesn't like stagnation."

In Providence, Rhode Island, he has already made a reputation for himself as a person who is always in the thick of things. An ironworker for 23 years, he served as an official in Local 37 for the last 19 years and as business agent for the last 11 and was president of the Providence Central Labor Council of the AFL-CIO.

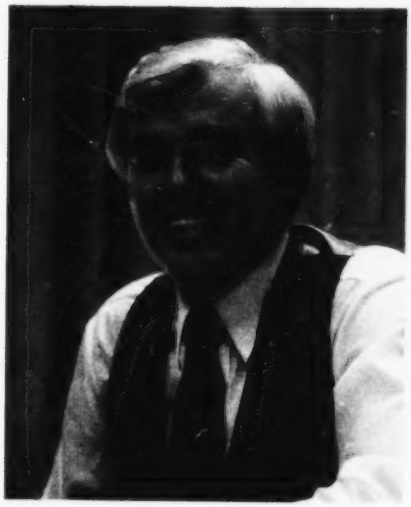
One of his first concerns in his new job at DOT is keeping the Secretary informed on the transit strike in New York. The problems of railroad workers, pilots and air traffic controllers, truckers, and other transportation employees will continue to come under his watchful eye.

He thinks the Department of Transportation will be one of the most important federal agencies during the ext ten years. "We are going to see a significant change in the modes of transportation for the first time in my lifetime. The highways and planes took us away from railroads, but we are now going back to the railroads and will be concentrating on mass transit because of the energy situation."

A native of Providence, he attended Providence College and Brown University. He was teaching a labor course at Providence College, but he had to give it up when he came to Washington.

John Hassell

The pioneering Interstate Highway System is just one of the projects under the management of John S. Hassell Jr., President Carter's nominee for Federal Highway Administrator. He also plays a key role in overseeing the country's total Federal-Aid Highway Program.



Martin Byrne

John Hassell

Although 93 percent of the Interstate system is now open to traffic, Hassell says the projected cost of completing the massive undertaking is $42.4 billion, which is more than the initial estimated cost in 1956 of constructing the entire Interstate system.

In terms of scope, there is nothing else like the Interstates on the horizon. "On the other hand," Hassell says, "we have a job that may be even larger than building the Interstate system—the rehabilitation and reconstruction of that system and the country's other highways."

The highways built back in the 1930s and 1940s are reaching the end of what the highway people call their service life. Some of the earliest-built sections of the Interstates are also showing signs of wear and will have to undergo major rehabilitation work.

"These maintenance problems are sometimes more complex and more difficult than the original construction," Hassell says. "Solving them is a major challenge that lies ahead for the states and for FHWA."

The shift from automobiles to public transit puts a damper on the heyday of building bigger and better highways. But Hassell sees no problem for the Federal Highway Administration. For most of the country, he says, driving on highways will continue to be the primary means of getting from place to place.

"It may seem somewhat of a paradox that we would still need highways during a time of energy conservation, but the better we use those highways, the better our energy conservation can be."

In the Georgia Department of Transportation, he was chief of policy and planning and was directly involved with the development of MARTA, Atlanta's rapid rail system.

While coming to Washington has created a few problems, such as putting his doctoral studies at Georgia State University on hold, Hassell says that the aspect of his job that pleases him most is the opportunity to view transportation programs from a broad national perspective.

Carl Horton

Carl Horton's job is to help make sure that minority business firms get a fair

Carl Horton

Alan Webber

share of the contracts generated by Department of Transportation dollars.

As a special assistant to Secretary Goldschmidt, he works with DOT's operating administrations and makes recommendations on how to improve minority business programs.

Horton says DOT has taken the lead among federal agencies in requiring recipients of its funds to take affirmative action to increase participation by minority businesses.

"We expect to see a significant increase in the share of contracts given to minority business firms by agencies that receive DOT funds," he says.

Starting in May, transit authorities, airport commissions, and other recipients will be required to set binding goals—specific percentages of grant funds—for minority business participation.

Horton has played an active role in this effort. He coordinated the writing of regulations, issued in March, that direct grant and financial aid recipients to set minority business goals. "It's likely that DOT's regulations will serve as a model for other agencies," he says.

For fiscal 1981, Horton says the Department of Transportation will set "a very ambitious goal" for minority participation in contracts let by its fund recipients. He says the regulations would affect about $15 billion in grants and financial aid. DOT has also set a goal of $140 million for minority businesses out of its approximately $1.5 billion in direct procurements for 1980.

"Most of the attention in the past has been focused on direct procurement by federal agencies, rather than on indirect contracting. Secretary Goldschmidt is firmly committed to providing minority business firms a maximum opportunity to participate in both direct and indirect contracts."

Horton plans to examine the minority business programs of DOT's operating administrations and, if necessary, restructure them to create a uniform and effective system within the Department. A successful program should include outreach and training both for agencies that receive DOT funds and for minority firms, he says.

Before coming to DOT early this year, Horton, an attorney, served as a policy advisor with the Small Business Administration. He was instrumental in the adoption of revised policies for SBA's government-wide program of purchasing from minority firms. He also helped to enlist the aid of industry, banking, and local governments in the minority small business program.

Alan Webber

Alan Webber is a ten-day wonder.

With little more than a week's notice, he quit his job as a reporter in Portland, crossed the continent to Washington to find a house, raced back across the country to rent his old one, packed up his family, and reported for duty at DOT as a special assistant to the Secretary.

While he is thought of mainly as the Secretary's speechwriter, Webber also acts as an antenna in areas far broader than transportation.

"My job is not just to regurgitate what has already been developed," he says. "The Secretary looks to me to develop new information and to gather intelligence about what is going on."

A native of St. Louis, Webber remembers that he went to Portland in the first place on a "purely romantic whim." In 1970, after graduating from Amherst in Massachusetts, he drove out to Seattle to see a friend off to the Peace Corps and "went down to the next stop on the line with no particular career direction in mind."

He ended up volunteering to help another friend start up the *Oregon Times* newspaper. That was around the time Neil Goldschmidt was being elected to the Portland City Council. Later, when Goldschmidt began building up his staff to run for mayor in 1972, Webber signed on as an assistant. He stayed for seven and a half years and then went back to reporting for a short time.

The development of Webber's speechwriting skills came when he took on the job because "nobody else was doing it." At the time, he thought it would be fun. "Little did I know that it would become a compulsion."

Although his duties at DOT are somewhat similar to his duties as the mayor's assistant, the main difference is in the vastness of the concerns. "There is so much more information involved and so many more people. Everything is so spread out that it's a lot harder to develop a program."

Right now, for instance, he is spending a lot of time on the Department's study of the automobile industry. In an attempt to provide the Secretary with a fresh perspective, Webber is digging into every aspect of the issue.

He is impressed by the talent he has found in Washington. "When I see all the people coming through this city who seem to have a handle on the really big issues, I am awed."

And, of course, he has given some thought to that book he will write someday. The subject? Portland, of course.

A Major Overhaul For the Seaway

By Madelyn Pruski

Extensive Repairs Are Made While the Locks Are Closed

Above, a cover to keep out the cold and the snow and stop-logs to hold back the water are in place at the Snell Lock.

Below, workers in hard hats and boots begin the overhaul of the U.S. locks.

"Going on 21" can be a difficult age. You begin to see some signs of growing old that will require attention if you're still going to be in good shape when you reach 30.

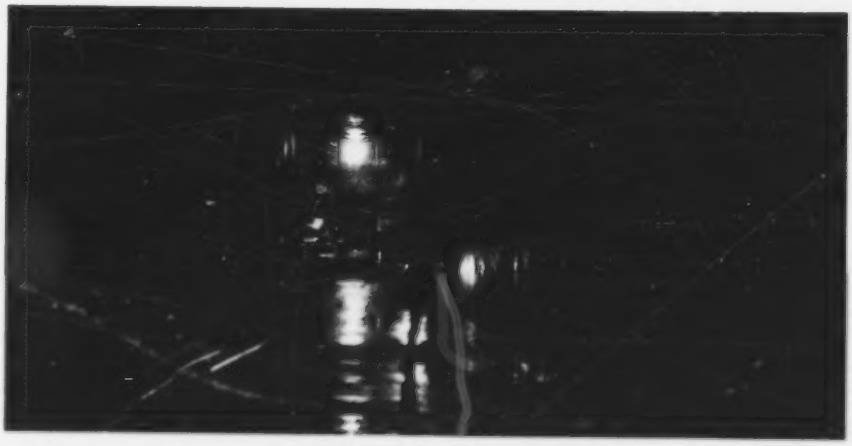
The St. Lawrence Seaway, which is operated jointly by the U.S. and Canada, celebrated its 20th birthday last fall, and the U.S. locks there just got a thorough overhaul during the winter months when shipping ceased. There is a normal winter maintenance program each year at that time, but this one was the most comprehensive in recent years.

Fifty temporary employees were hired to work with the Saint Lawrence Seaway Development Corporation's regular maintenance crews, and four contractors with approximately 60 employees were also involved.

Both of the locks under U.S. jurisdiction—the Eisenhower and the Snell locks near Massena, New York—were covered, "dewatered" (to use the Seaway term), and heated. Work got under way on December 22, immediately after the last commercial vessel, the Maplecliffe Hall, had cleared the locks.

Stop-logs—large gate-like constructions—were put in place upstream and downstream of the locks to serve as dams to hold back the river. This allowed the huge miter gates to be opened and closed for repairing and painting.

Once the stop-logs were in place and the water was out of the locks, previously-assembled roofs were placed over the two lock chambers. This was no easy job considering that each of the locks is 800 feet long and 80 feet wide. The roofs were then insulated and sealed to prevent loss of heat while work was going on.



Photos by Dominic Tricase

Above, maintenance work began as soon as the last ship of the season, the Maplecliffe Hall, had cleared the U.S. locks.

Below, replacement of worn cables is an important part of the Seaway's maintenance program.

All the necessary equipment for this major repair program—stairways, scaffolding, heaters, and the rest—had to be lowered 80 feet down to the bottom of the lock chambers. Then the real work could begin.

Valves and gates were sandblasted and painted. Cables were replaced. Eight wire ropes on the vertical lift gate were replaced. And new wire rope replaced the old on the fender booms at each lock. These booms, also called ship arresters, keep a ship from hitting the downstream gates as it enters the lock chamber.

As is done every year, core samples were taken to locate deteriorating concrete in both locks. The weak concrete was removed and replaced.

A lot of work went on outside the locks as well. More than 200 floating navigation aids, or buoys, in the American waters of the Seaway were hauled out, repaired if necessary, and painted. Towers for the permanent navigation aids were built and made ready for installation in the spring.

Inside the vessel traffic control center, all the equipment was inspected and repaired. Uninterrupted communication with the first ship of the year—and all the ships that follow—is vital.

All the vessels in the Seaway Corporation's fleet were overhauled. This included the machinery in the busy tug, Robinson Bay. A familiar sight on the Seaway, the Robinson Bay routinely breaks ice to open a channel for the first ship through the Seaway. And all during the navigation season, whenever a ship has a problem that interferes with normal traffic patterns, "old reliable Robbie Bay" steams up or down the river to help out.

The flushing port system at Eisenhower Lock was completed this year.

This system was designed to flush ice from the lock chamber, where it accumulates in early spring and late fall. When ice can be flushed out of the lock, transit time for each ship is reduced, and there is no ice jammed in the lock to damage a ship's hull, the walls of the lock, or the mitre gates. Because of the magnitude of the work, the system was installed in three phases, beginning in 1976. This project is part of the Seaway Corporation's program to extend the navigation season.

During its first 20 years as a marine link between the North American heartland and the trading nations of the world, the St. Lawrence Seaway-Great Lakes system has been used by nearly 125,000 commercial ships from 60 nations.

"The jointly-operated St. Lawrence Seaway has more than lived up to its potential as a major international trade route," says D.W. Oberlin, Administrator of the Seaway Corporation. "Keeping the waterway competitive, reliable, safe, and efficient is our top priority."

Madelyn Pruski is public information officer for the Saint Lawrence Seaway Development Corporation in Massena, New York.

Task Force Looks for Ways To Encourage Ridesharing

Going Together

By Roy M. Coughlin

Americans have been used to going where they want to go when they want to go there—alone.

Now, fuel is short and prices are rising, and they are beginning to look around for people to share the ride with. "Pool it" is the password as people from Portland to Providence pile into vans and buses and the neighbor's station wagon in an all-out effort to beat the commuter hassle.

With the formation of a National Task Force on Ridesharing in October, President Carter joined forces with private business and state and local governments to give pooling and public transit the long, hard look they deserve.

Chaired by Los Angeles Mayor Tom Bradley, the task force works with Secretary of Transportation Neil Goldschmidt to explore ways to bring about a national swing to ridesharing. Says Bradley, "We have accepted, as our top priority, the challenge of creating a healthy climate in this country for the growth of ridesharing. That calls for a widespread change of attitude and a strong coalition between business and government. This task force will have succeeded when all stumbling blocks have been removed and the philosophy of ridesharing is accepted as second nature."

Extolling the rewards of ridesharing is no novelty to the members of the task force, a cross section of business-people and government officials who have been involved with and concerned about transportation for years. These are the task force's objectives:

- to encourage business and government leaders to start ridesharing programs or to expand and improve existing programs
- to investigate any regulatory, financial, or insurance procedures that might impede the expansion of ridesharing and to recommend changes
- to make recommendations on how government can help resolve the problems inhibiting ridesharing
- to create an exchange of ideas about ridesharing among government agencies and private business.

To address these concerns, the task force has four subcommittees: marketing, insurance, institutional, and legislative. The chairpersons of the subcommittees form the steering committee.

The Department of Transporation has high hopes for ridesharing programs, but it isn't the only government agency that will benefit from them. A national awareness of ridesharing would help the Department of Energy meet the President's goal of saving 400,000 barrels of oil daily by 1990. The Department of Commerce has begun to acknowledge ridesharing as an economic enhancement that allows employers to expand on sites now used for parking and to expect many other benefits. And the Environmental Protection Agency looks to ridesharing to make significant strides in reducing air pollution, especially in high-growth areas.

Recognizing that ridesharing is a solution to problems experienced by diverse agencies with little regular interaction, President Carter formed the Interagency Conservation Action Group to give high visibility to energy conservation through transportation, with attention to ridesharing. White House staff members are working with the task force members on ways to encourage ridesharing by various federal agencies.

After several meetings of the subcommittees, the National Task Force on Ridesharing sent Secretary Gold-

Top of page, vanpooling and other forms of ridesharing are being encouraged by the Department of Transportation as ways to save significant amounts of energy.

Above, Mayor Tom Bradley of Los Angeles is chairman of the National Task Force on Ridesharing.

Below, at a news conference in February, Secretary Neil Goldschmidt said he wants to double ridesharing nationwide—to about 40 percent of all commuters.

The National Task Force on Ridesharing

- Tom Bradley, Mayor of Los Angeles
- Thomas W. Bradshaw Jr., Secretary of North Carolina Department of Transportation
- T. F. Bradshaw, President, Atlantic Richfield
- Roy M. Coughlin, Southern New England Telephone
- Jack Derby, Statewide Ridesharing Coordinator, California Department of Transportation
- Richard H. Erickson, Manager of Safety, Health, and Security, Hallmark Cards
- Ella T. Grasso, Governor of Connecticut

- Ray Herzog, Chairman of the Board, 3M
- Robert D. Kilpatrick, President, Connecticut General Life Insurance
- Jim Lowe, Manager of Employee Services, IBM
- Dale W. Luehring, General Manager, Golden Gate Bridge and Transit District
- John A. Mahony, Manager of Office Services, SmithKline Corporation
- Louis R. Nickinello, Massachusetts state representative
- Clarence Shallbetter, Project Director, Public Service Options, Inc.
- David J. Sherwood, President, Prudential Insurance
- Richard Somerville, Transportation Program Manager, Texas Medical Center
- Stan Stokey, ridesharing coordinator, Tennessee Valley Authority
- Jeannette Williams, Seattle city councilwoman

schmidt an initial report, which contained these five recommendations:

- establish a clearing-house for national ridesharing information
- coordinate a high-level interagency information and idea exchange
- develop peer contact between corporate leaders on the task force and other chief executive officers to promote ridesharing
- issue Department of Transportation guidelines for the use of federal funds for ridesharing
- exempt windowed passenger vans over 7,000 pounds from compliance with the national automotive fuel economy standards.

Secretary Goldschmidt received these recommendations favorably. He says of the task force's work, "There's not a moment to lose in the promoting of massive ridesharing programs. We've got some tough habits to break. People have been driving alone because there was no better choice, and that choice is what we've got to provide.

"Ridesharing is the single most dramatic step the average American can take to save energy and to preserve the environment. Each commuter car left at home eliminates 250 pounds of pollutants from the air and saves hundreds of gallons of gasoline a year."

Mayor Bradley and Secretary Goldschmidt contacted all governors to recommend the establishment of ridesharing task forces at the state level and asked that persons be named to act as liaison to the national task force. They've also sent letters to state transportation agency heads and mayors of cities with a population of 200,000 or more offering the help of the task force in implementing ridesharing efforts.

The insurance subcommittee met with many representatives of the insurance industry. A survey conducted earlier had shown that ridesharing operators believed that the underwriters had a lack of experience with ridesharing and that high insurance costs were due to an unfamiliarity with the high safety performance of vanpooling. The subcommittee is working with the industry to increase support for ridesharing that would reduce problems of availability and cost. They are also formulating uniform definitions for ridesharing techniques that will make legislation, fuel allocation, and insurance classification easier.

Roy Coughlin, vice chairman of the task force, discusses ridesharing with Connecticut Governor Ella Grasso.

The legislative subcommittee is urging the use of federal-aid highway funds for interest-free loans to ridesharing programs. They are asking for the publication of information clarifying ways to procure and use federal funds and are recommending that incentives provided by employers be excluded from taxable income. They suggested several tax incentives that could be provided by various levels of government to stimulate ridesharing among employers.

The marketing subcommittee solicited the involvement of labor in task force deliberations and suggested a gasoline tax based on a percentage of the price rather than on a flat rate per gallon, with a portion of the revenues being dedicated to ridesharing and transit. They also suggested that companies under contract to federal agencies may be required to consider ridesharing as a condition for receiving federal funds. The subcommittee has also surveyed task force members and prepared a list of associations and publications to be included in a communications network they are developing.

The institutional subcommittee has undertaken the development of a model fuel-allocation plan for states in conjunction with the Department of Energy. They are monitoring the progress of states in setting up task forces, and they are supporting a proposed model state ridesharing law that, if accepted, would tend to reduce regulations inhibiting ridesharing in each state.

We've come full cycle from the days when the owner of the town's only auto treated his neighbors to a ride in the rumble seat. Those days are gone, but, with gasoline scarce and costly, so are the days of the single-occupant commuter vehicle.

Because people are taking the back seat, conserving energy and preserving the environment can move up front where they belong.

Roy Coughlin, of Southern New England Telephone, is vice chairman of the National Task Force on Ridesharing.

Building a "Sensitive" Freeway

Century Freeway Planners Work with Local Residents

By Clyde Linsley Jr.

If Americans are in love with their cars, as has often been claimed, then Los Angeles is their valentine. More than any other city in the world, with the possible exception of Houston, Los Angeles is a monument to the personal automobile. The city sprawls over 464 square miles of Southern California, and the vast stretches of Los Angeles County spatter out from there.

Like most American cities that experienced major growth in this century, Los Angeles is held together by an intricate network of streets and highways. The city pioneered the urban freeway and has come closer to perfecting it than anyplace else. So when a better way to build freeways came along, it is not surprising that Los Angeles discovered it.

The site of this most recent discovery is a 17.2-mile strip of land that crosses the county from east to west, beginning at the intersection with the San Gabriel River Freeway (I-605) near the city of Norwalk, passing through Watts in the southern part of Los Angeles' southwestern border, and ending in El Segundo in the vicinity of Los Angeles International Airport.

This strip is the corridor through which someday will pass Interstate 105, known in the area as the Century Freeway because it will parallel Century Boulevard (100th Street). The project is well-known in Los Angeles: it had been the subject of litigation for seven years.

The Century Freeway is not the first segment of the Interstate Highway System to become bogged down in local controversy. The system, which was originally to be completed in 1972, is stalled at about 92 percent completion. The segments that remain to be built are nearly all in urban areas, and nearly all are the targets of varying degrees of local opposition.

What makes the Century Freeway different—nearly unique, in fact, in recent years—is that the controversy appears to have been solved, the differences settled, and construction soon to begin.

Moreover, the compromise that has led to the resolution of these long-standing disagreements came about because of a recognition that an old era of highway planning and construction had passed and a new era was already under way. The Century Freeway compromise may well point the way to resolutions of other highway disputes.

"Building transportation systems cannot be isolated from other community needs," Secretary of Transportation Neil Goldschmidt said in October, in announcing the agreement that effectively ended the Century Freeway battle. "I am glad that we have been able to work together with community representatives and government officials to solve the transit, housing, environmental, and employment issues that are so closely related to each other and so vital to the well-being of residents in the project area."

The key to the Century Freeway agreement is embodied in the words "work together." The agreement reflects an understanding that, for too many transportation planners, is altogether new: that local objections should be considered and dealt with, rather than simply overcome.

Such an understanding results from the realization that the world in which freeways are built has changed significantly and that freeways must also change to meet these new conditions.

The Century Freeway story began in 1958, when the California Division of Highways started planning the route for the west half of a highway from Los Angeles International Airport to Central Avenue in the Watts section of Los Angeles. A total of 12 alternative routes were considered before a final decision was made in 1965.

Studies for the eastern half of the route began in 1963, and a final route approval was adopted in 1968 by the California State Highway Commission.

Public hearings on design—the next stage in the highway approval process—began in 1969 and continued through the spring of 1970. The design that was finally approved met the Interstate highway standards of its day: a 10-lane freeway with a 64-foot-wide median strip designed to accommodate an exclusive bus lane in the center. The right-of-way varied in width from 220 to 350 feet. Estimated cost for the project was $400 million, about half of which

was earmarked for the acquisition of about 6,000 parcels of land along the right-of-way.

Completion of the project was estimated for 1977 or early 1978, but in 1972, a loose coalition of protesters filed suit in federal court to block the project. The plaintiffs consisted of individual property-owners living in the path of the proposed freeway, the local chapter of the National Association for the Advancement of Colored People, the Sierra Club, and the Environmental Defense Fund.

The suit resulted in a temporary injunction that blocked construction of the project, a situation that continued for eight years. U.S. District Judge Harry Pregerson ruled that state and federal officials would have to comply with a number of environmental and housing relocation requirements before work could continue. A new environmental impact statement was required to reflect those changes.

By mid-1978, the new environmental impact statement was completed and awaiting final approval at the federal level. The freeway project, in fact, was one of several controversial Interstate highway segments requiring a Secretarial decision.

During September of 1978, the plaintiffs began meeting with representatives of the state of California. By October, the Department of Transportation was able to announce that a "tentative settlement" had been reached. While the

agreement set out some boundaries for conducting future negotiations, it was hardly a permanent accord.

Intensive negotiations began the following month. Almost at once, a major long-standing issue of concern to residents of the area resurfaced: the question of housing the occupants of roughly 6,000 residential units along the path of the proposed highway.

In an effort to resolve the controversy, local officials came to Washington and met with the Secretary of Transportation. Out of that meeting came a federal commitment to the concept of using highway trust funds to assist in housing relocation connected with construction of the freeway. Although it was only a single step toward a final settlement, the acceptance of the concept of using highway funds for other aspects of a highway project besides planning and construction of the road may have been a watershed.

Los Angeles Mayor Tom Bradley soon proposed that economic and urban development activity be coordinated with the highway project. The mayor obtained a commitment from the White House to coordinate federal grant packages to foster development along the corridor, and a system of continuing federal liaison with the negotiators was established through the Federal Regional Council, a group of regional representatives from all federal agencies.

By the summer of 1979, a final settlement had been agreed upon. By this time a new man was in charge at the Department of Transportation: Neil Goldschmidt, a former mayor known for an interest in urban transportation and a commitment to maintaining the livability of American cities.

When the agreement was finally brought back to U.S. District Judge Pregerson in October, Goldschmidt flew to Los Angeles and waited outside the courtroom until the judge had lifted the injunction and ruled that work on

Above, Los Angeles City Councilman Robert Farrell is chairman of the Century Freeway Housing Advisory Committee.

Left, some of the houses that were along the Freeway's route have already been moved away.

Right, the route of the Century Freeway will pass near the Martin Luther King Hospital on Wilmington Avenue.

Photos by Barr/Uniphoto

the freeway could go forward.

"We hope that the inconvenience and hardship that has been endured will be outweighed by the vast benefits resulting from this project," Judge Pregerson said. "Seven years ago, none of us envisioned that such benefits could flow from the construction of a freeway."

Secretary Goldschmidt echoed those sentiments after the ruling had been handed down. "Today we are witnessing the creation of a 'sensitive freeway,'" he said at a news conference. "It is sensitive in its engineering and design, which demonstrate our best efforts to meld technological innovation with human values. But more important than even that, it is sensitive in its approach to decision-making and in its recognition that there are alternative ways to move people and that these ways must be developed and invested in."

In February, Goldschmidt appointed DOT regional representative Norman H. Emerson to be his on-the-scene project coordinator for the Century Freeway. Emerson had been an administrative aide to Mayor Bradley before taking over DOT's western regional office.

What makes the Century Freeway proposal unique? One aspect is the partnership of local, state, and federal government—and between federal agencies—a concerted effort designed to make the freeway more than simply a major transportation artery. The Century Freeway is intended to be not only a means of getting cars and trucks from one place to another, but also the focal point for a major economic development of the entire area—a working out of the Carter Administration's national urban policy.

Another aspect, certainly, is its "multi-modal" nature, with its emphasis on transit vehicles and carpools. Six or more passenger stations, with park-and-ride facilities, are to be located along the route. Access ramps will be controlled so entry can be regulated, and bypass lanes will be provided for buses and carpools. The possibility of a future bus or rail link to the Harbor Freeway is part of the plan, and the proposed bus lanes in the median strip of the Century Freeway itself will be capable of being altered for rail use at some later date.

"The new freeway is expected to divert 67,000 vehicles per day from nearby streets, thereby reducing congestion, delays, and the amount of gas wasted while idling in traffic," Goldschmidt said. "With increased use of the transitway for buses and carpools, we expect to accomplish energy savings and decrease dependence on the automobile."

The new agreement also calls for a scaled-down highway—eight regular traffic lanes instead of the ten lanes originally envisioned.

A memorandum of understanding between the Department of Transportation and the Department of Housing and Urban Development pledges both agencies to cooperation on implementing the President's urban initiatives program in the Century Freeway area. A key aspect of the program is the relocation of displaced residents; DOT has agreed to a plan that would relocate, rehabilitate, or replace up to 4,200 housing units.

Finally, the agreement provides a format for economic redevelopment along the freeway corridor. The project is expected to generate about 20,000 jobs during the ten-year construction period, and a significant number will go to minorities, women, and residents of the affected area. The total cost of the project, including about $200 million for housing replacement, may run as high as $1 billion to $1.5 billion.

But perhaps the most fascinating aspect of the Century Freeway agreement is the fact that the agreement exists at all, for it indicates a willingness to work together and a spirit of cooperation that the warring factions involved in freeway disputes previously have not often displayed.

The agreement, said Goldschmidt, "demonstrates the simple truth that cooperation among people of good faith can overcome any obstacle, conquer any adversity, defeat any problem."

Clyde Linsley is on the staff of the Department of Transportation's Office of Public Affairs

Left, Don Terner, Director of California's Department of Housing and Community Development, speaks at a meeting of the Century Freeway Housing Advisory Committee.

Below, freeway relocation assistance information offices like this one have handled many thousands of inquiries.

for your information

Recent DOT Publications

Reports and Studies
(single copies available from office shown; please enclose a self-addressed mailing label)

Injuries in Air Transport Emergency Evacuations, FAA-AM-79-6, February 1979; Federal Aviation Administration, Office of Aviation Medicine, AAM-500.

Laboratory Performance During Acute Intoxication and Hangover, FAA-AM-79-7, February 1979; Federal Aviation Administration, Office of Aviation Medicine, AAM-500.

Comparison of the Job Attitudes and Interest Patterns of Air Traffic and Airway Facility Personnel, FAA-AM-79-11, March 1979; Federal Aviation Administration, Office of Aviation Medicine, AAM-500.

Effects of Load, Inflation Pressure and Tire Deflation Pressure, and Tire Deflection on Truck Tire Noise Levels, January 1979; National Highway Traffic Safety Administration, Publications Office, General Services Division, NAD-42.

Energy Conservation Retrofit Handbook, September 1979; U.S. Coast Guard, Civil Engineering Division, G-ECV/61.

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Transportation Energy Activities of the U.S. Department of Transportation, January 1980; Technology-Sharing Division, Office of Intergovernmental Affairs, Office of the Secretary, I-25.

Joint Development: Making the Real Estate-Transit Connection, July 1979; Urban Mass Transportation Administration, Office of Policy, Budget, and Program Development, UPP-1.

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Financing Transit: Alternatives for Local Government, July 1979; Urban Mass Transportation Administration, Office of Policy, Budget, and Program Development, UPP-1.

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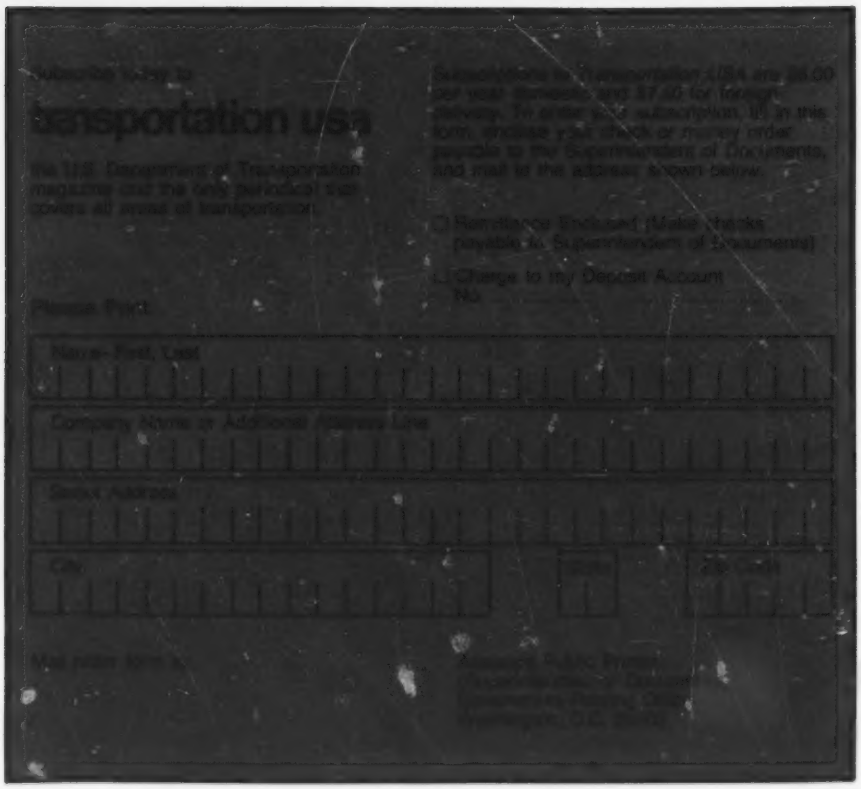
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Effectiveness of Noise Barriers Along the Capital Beltway (I-495) in Northern Virginia; Federal Highway Administration, Office of Environmental Policy, HEV-21.

Copies available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, at prices indicated.

Voice Data Entry in Air Traffic Control, AD-A073-670/2GA, August 1979; $8.00.

An Assessment of Terminal Air Traffic Control System Performance with and without Basic Metering and Spacing Automation, AD-A073-494/7GA, March 1979; $7.00.

Potential of Noncapital Methods and Their Implementation To Reduce Congestion and Save Energy at Major U.S. Airports, PB-300-769/7GA, May 1979; $16.00.

Comparison of Special Group Experiences in Establishing Independent Motor Carrier Business, Volume I: Executive Summary, PB-300-537/8GA, August 1979; $5.00.

Measuring the Achievement of National Urban Transportation Goals and Objectives: The Role of Metropolitan Planning Organizations, PB-300-417/3GA; $6.00.

Effectiveness of Speed Control Signs in Rural School Zones and Small Communities, PB-301-110/3GA, July 1979; $16.00.

Assessment of Vehicle Safety Problems for Special Driving Populations, PB-301-151/7GA, February 1979; $9.00.

Development of Research in the Construction of Transportation Facilities: A Study of Needs, Objectives, Resources, and Mechanisms for Implementation, PB-301-389/3 GA; $10.00.

The Effects of Primary Power Transmission Lines on the Performance of LORAN-C Receivers in Experimental Terrestrial Applications, PB-301-367/9GA, July 1979; $11.00.

Analysis of the Pneumatic Burst of a Large Seamless Steel Pressure Vessel in Natural Gas Service, PB-300-579/0GA, March 1979; $9.00.

Copies available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, at prices indicated, payable by check or money order to the Superintendent of Documents.

Emergency Medical Services: First Responder Training Course, S/N 050-003-00362-0, March 1979; $2.25.

Innovations in Public Transportation, FY 1978, S/N 050-014-0016-9; $8.00.

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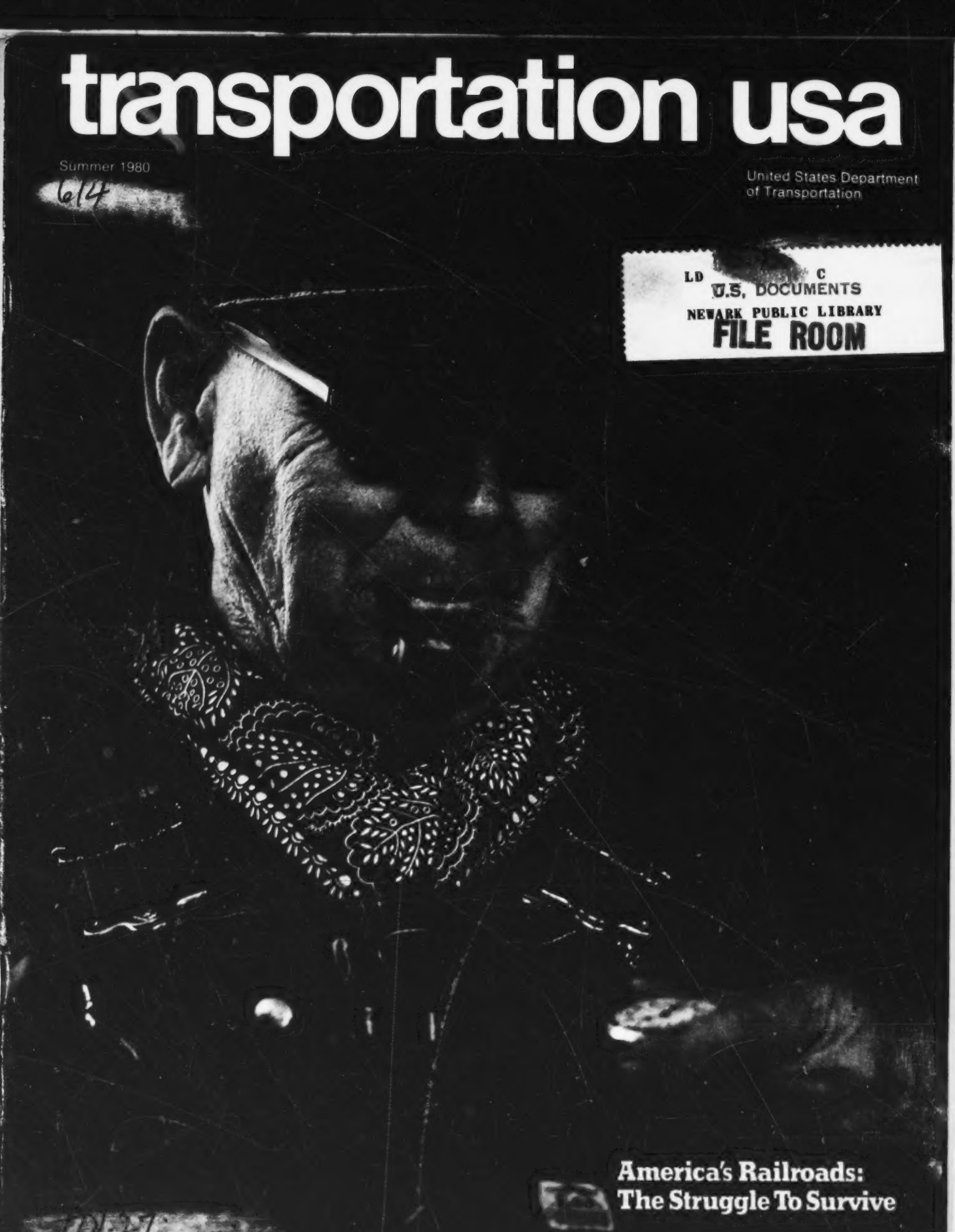

America's Railroads: The Struggle To Survive

Summer 1980

Volume 6
Number 4

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America's Railroads:

2 The Struggle To Survive

3 Saving the Passenger Trains

5 DOT Steps Up Enforcement of Rail Safety Regulations

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Cover: This engineer on a Colorado line symbolizes the many thousands of workers on U.S. railroads. See the series of articles on the railroads beginning on page 2.

Photo by Jim Amos/Photo Researchers Inc.

Inside cover: Mudflows and floods following the eruption of Mount St. Helens washed out part of State Highway 504 in southwestern Washington. See the article on the effect of the Mount St. Helens eruptions on transportation on page 14.

Photo by Cheryl Haselhorst/The Vancouver Columbian

Back cover: A Cuban mother and child are brought aboard a Coast Guard cutter near Key West, Florida. See the article on the Coast Guard's work with Cuban refugees on page 17.

Photo by Lou Parris

U.S. Department of Transportation

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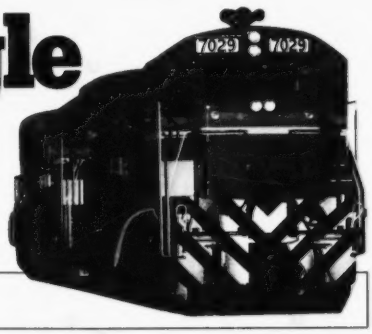
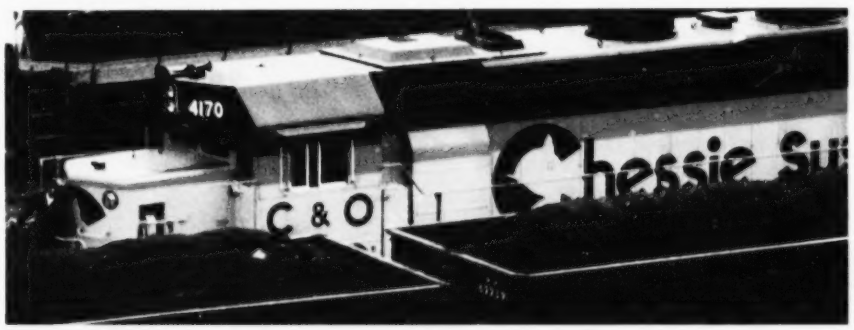
America's Railroads:

The Struggle To Survive



Ernest Robl

By Michael Avenenti



EPA/Documerica

1980 has been an auspicious year for the railroads.

In May, President Carter put his signature to legislation providing $860 million in federal funding for rail transportation. Included in the package were $750 million in additional funds for improvements in the Northeast Corridor between Washington and Boston and $36 million for the exploration of new passenger corridors in other parts of the country.

But the fact that the federal government is putting up close to $1 billion also emphasizes one thing: The railroads are in trouble.

While the industry seems to be in an upswing at the moment, a number of the nation's major rail lines teeter precariously on the brink of financial disaster. The challenge that lies ahead is finding a way to give the railroads a sound economic foundation that would allow them to compete with trucks, barges, and pipelines.

"Our transportation system, including railroads, is the economic lifeblood of the nation," says Secretary of Transportation Neil Goldschmidt. "It moves the goods that move the economy. The public and private sectors working together in partnership must see that this system functions efficiently."

One reason the railroads must continue to function efficiently is that the United States is seeking ways to lessen its dependence on imported foreign oil. And only railroads can move in bulk the vast deposits of western coal that can help the country achieve this goal.

There is another important economic reason for having healthy railroads: Agricultural exports have become one of the major sources of revenue for shaving the nation's balance of payments deficit, as the product of one of every three of our acres goes overseas. Without fast, dependable rail service for Midwest farmers, these crops can't get to ports for shipment abroad.

And, as Goldschmidt has noted, "there is a clear relationship" between saving the railroads and saving "jobs here at home. Not only direct railroad jobs are at stake, but jobs with farmers, shippers, and ports are all interrelated."

However, providing a sound economic foundation for the railroads won't be easy. A Department of Transportation report says that the railroad industry will fall $15 billion short of the cash it will need by 1985—capital for fixing track, performing maintenance, buying new rolling stock, and paying off old debts.

One answer is for the government to step in and pour massive amounts of taxpayer dollars into the ailing railroads, but the Carter Administration has rejected this concept of nationalization outright.

A more viable solution, the Administration believes, is to permit railroads the freedom to set rates that are competitive but that also allow the rail companies to earn an adequate return on their investment. It is the inability to make a sufficient profit that has forced the railroads into their downward financial spiral.

Railroads have proved that, given the opportunity, they can earn enough to become self-sufficient. Last year, at DOT's urging, the Interstate Commerce Commission relaxed rate-making restrictions on the rail transportation of fresh fruits and vegetables.

As a consequence, railroads that took advantage of this new flexibility were able to acquire a considerably larger share of the produce transportation business—a market that had all but totally slipped away from them in recent years. The result: better service for growers, a fresher product for the consumer, and a profitable return for two western railroads.

"We're just entering a period where the railroads are again starting to think of themselves as potentially profitable," says Goldschmidt. "Instead of putting money into land companies or minerals, or diversifying, they're beginning to talk about railroading as a way to make a good living."

Much will depend on the success of the Administration and Congress in achieving substantial rail regulatory reform. Legislation to achieve this goal has been submitted to Congress.

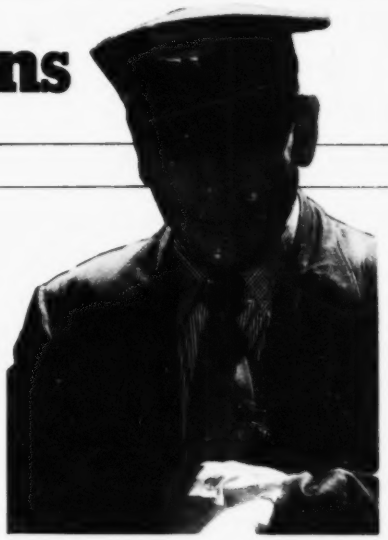
"If the railroads get together and work out their concerns about rail regulatory reform legislation, we'll get a good bill," Goldschmidt says. "My attitude is this—if the race is a mile and you get a half mile of it run, that's a race worth running. We'll get the other half mile eventually."

Whether the American railroads will ultimately win their struggle to survive, no one knows. But the outlook today is more hopeful than it has been for a long time.

Michael Avenenti is the Public Affairs Officer for the Federal Railroad Administration.

Saving the Passenger Trains

By Beth Hillson



Robert Ritter—Lensman Photos

Below, Amtrak's new lightweight electric locomotive, the AEM-7, can accelerate and decelerate faster than any locomotive previously used for passenger service in the U.S.

America's passenger railroads are changing quickly these days.

Better planning by transportation agencies, more efficient locomotives, innovative equipment for building (or rebuilding) railroads, and better tracks are adding up to a swifter and smoother system.

With the help of DOT's Federal Railroad Administration, the line running through the densely populated Northeast Corridor is being upgraded, and funding has been provided for experiments in passenger service for areas away from major population centers.

Yet it was only two years ago that the Department of Transportation recommended that Congress make major cuts in the national rail passenger system. Many observers questioned the wisdom of cutting this mode of transportation.

The Department, however, had good reason to recommend the cuts. Trains are energy-efficient, but only when people ride them. And few people were traveling on many of the routes. In fact, less than three-tenths of one percent of all intercity travel was by rail, and Amtrak's deficit was growing fast enough to alarm both DOT and Congress.

Enter the latest energy crunch.

Unlike the period of shortages following the oil embargo of 1973, when people thought gas lines were a brief aberration, the new energy situation led many Americans to reconsider their steadfast dependence on the automobile. Amtrak's ridership began a surge that has yet to subside.

The Amtrak Restructuring Act of 1979 was designed to eliminate Amtrak's energy-inefficient and costly routes, and it did just that. Today Amtrak operates a 23,763-mile system, with ridership up 21 percent from 1978 to 1979. The Act, for the first time, set Congressionally-mandated performance guidelines for operating the routes in the system, and Amtrak's Board of Directors can now discontinue service along any route that doesn't meet those guidelines.

The Act also provided nearly $20 million for new, state-assisted routes. It directed that a state could ask Amtrak to operate a train if the state agreed to pay a specific amount of its operating cost: 20 percent the first year, 35 percent the second, and 50 percent each year thereafter. States previously had been required to pay 50 percent from the outset.

Since that bill was passed, eight states have applied for the operation of 15 routes. The new, more relaxed funding has brought more applications than there is money in the program to pay for. Applications for an additional ten routes in eight states are under review by Amtrak.

One section of the Amtrak system—the Northeast Corridor—has received acclaim as an important high-speed route and potential model for future routes. The corridor, 456 miles of mainline track between Boston and Washington largely owned and operated by Amtrak, is the principal area in the United States where population and geography make frequent high-speed train service sensible today.

In 1976, Congress passed the Railroad Revitalization and Regulatory Reform Act, which directed the Federal Railroad Administration and Amtrak to rebuild that corridor's track to provide

Worries about the cost and availability of gasoline have brought people back to the passenger trains.

Everett Johnson Lehman Photos

high-speed, electrified rail passenger service to the 32 million people who live and work along its route. Congress initially authorized $1.75 billion to accomplish the task. In 1980, it authorized $750 million more, for a total of $2.5 billion.

In April 1980, the Northeast Corridor project entered its fourth work season and is now showing signs of actually becoming that high-speed route envisioned in 1976. Work on this year's track program will cost an estimated $343 million. Nearly 60 percent of the work in 1980 will be done on the southern end of the corridor, between Washington and New York.

During the 1979 work season, the project concentrated on the northern segment between New York and Boston. Some 121 miles of concrete ties and continuous-welded rail were put in place. Passengers riding that portion of the corridor now experience the smooth, quiet ride with little sway that will be the norm for the entire corridor when the program is completed late in 1984.

That smooth ride is possible because of some innovative machinery being used to rebuild the more than 900 track-miles in the project. One star performer has been the 1.2-mile-long Track-Laying System, now in its third season.

The Track-Laying System is a series of machines that totally renew a railroad bed from its foundation of crushed rock to the alignment of the rails. The Northeast Corridor project is the first demonstration of this sytem in the United States. Last year the system laid down an average of two-thirds of a mile of new track per day.

Amtrak plans to operate some new and better equipment over all this upgraded track. One of 47 new high-speed AEM-7 electric locomotives made its Corridor debut on May 9. Another is being tested at DOT's Transportation Test Center near Pueblo, Colorado (see article on page 7.)

A Swedish design built by General Motors, the AEM-7 can accelerate and decelerate much faster than any locomotive previously used for passenger service in this country. The new equipment will help Amtrak meet the legislatively-mandated trip times of two hours and 40 minutes from Washington to New York and three hours and 40 minutes from New York to Boston. In addition to its speed, the AEM-7 is lightweight and therefore about 20 percent more fuel-efficient than a conventional locomotive.

Once it is completed, the Northeast Corridor system is expected to take much of the pressure off already overburdened highways and airports in the Northeast. Full electrification will make the system far less dependent on petroleum-based fuels; for this reason, the Northeast Corridor project is being watched closely by transportation officials around the country.

Of course, few other areas of the country have the population density to support a sophisticated high-speed system like the one in the Northeast, but all areas will be facing energy shortages. The Federal Railroad Administration has been looking at the small to medium-size population centers in the United States to see what can be done to meet their rail transportation needs.

FRA chose a route from Concord, New Hampshire, to Boston—a distance of about 75 miles—as the site for an experiment in rail passenger service. FRA and the state of New Hampshire provided a $3.2 million research and development grant for the operation of passenger service over the Boston and Maine line's Concord-to-Boston route.

Passenger service began in January of this year, and ridership is averaging well over 350 round-trip passengers on weekdays and as many as 1,400 a day on weekends. Two trains each workday in each direction are timed to serve commuters, while once-a-day round-trip service on weekends is used primarily by shoppers who leave for Boston in the early morning and return in mid-afternoon.

At present, a traditional five-car passenger train is in service, but experiments are being conducted with two self-propelled, highly fuel-efficient vehicles to determine which gives the more cost-effective service for a mid-size community. One of these vehicles, the Budd Car, operated during the first month of the project. The other, the smaller and lighter-weight British-designed Rail Bus, will begin operating over this route in the fall.

The Budd Cars, the same size and weight as a regular passenger train car, have a diesel engine and can be operated from either end. Each car is designed to pull its own weight and can easily be coupled to other cars and uncoupled. The cars can be operated singly for off-peak or shuttle service, joined together in trains of up to ten or twelve cars for rush hours, and even coupled into locomotive-drawn trains for intercity service.

The Rail Bus, an experimental vehicle developed for British Rail, is ideally suited to lower-density markets. Its body is that of a traditional bus, but its undercarriage is the steel frame of a rail car. Weighing only about one-third as much as a normal rail passenger car and driven by a diesel bus engine, the Rail Bus can average up to 500 passenger miles per gallon of fuel, making it more efficient than any other passenger vehicle in the United States.

The Rail Bus adapts easily to nearly any track conditions and requires very little track upgrading before it can be operated. It is easy to mass produce at low cost and may prove to be an excellent choice for routes in the U.S. that do not justify the large expense of upgrading track and purchasing expensive rail equipment.

America's passenger trains are gaining new equipment, new tracks to run on, and—everyone hopes—enough passengers to keep them running.

Beth Hillson is on the staff of the Federal Railroad Administration's Office of Public Affairs.

Poorly maintained track caused 4,797 of the 11,277 rail accidents that occurred in 1978.

DOT Steps Up Enforcement of Rail Safety Regulations

By JoAnn Sloane

Frank Cerus

To assure the greatest possible safety in the operation of U.S. trains, DOT's Federal Railroad Administration employs some 300 safety inspectors throughout the country to find out if federal safety regulations are being complied with.

Their traditional inspection method has been to spot-check railroad track and equipment for defects, but unfortunately, this method has not been able to stem an increasing tide of accidents during the past few years.

Several steps have been taken by FRA to reverse the alarming rise in train accidents. Stricter enforcement of existing regulations and the addition of new regulations to meet specific problems during the past two years is finally beginning to have an effect: In 1979, the number of accidents dropped for the first time in five years.

In addition, FRA has deliberately focused its resources on three railroads with poor safety records. This method of concentrated monitoring has produced dramatic results. On one of these railroads, the number of train accidents dropped from 465 in the first seven months of 1978 to 285 for the corresponding period in 1979. Fatalities fell from 17 to none reported, and injuries dropped from 74 to 6.

Another weapon FRA has at its disposal is heavy fines for railroads that disregard regulations. As part of its stepped-up safety campaign, FRA collected a record $7.5 million in fines in 1979.

Although imposing stiff fines is one way of increasing the pressure for safety in the movement of hazardous chemicals, by itself it won't solve the problems. After realizing that certain types of uninsulated tank cars represented a major public safety problem, FRA and DOT's Materials Transportation Bureau decided that stronger standards for the construction and maintenance of the 20,000 cars in that category were needed. Regulations were issued in September 1977 for a retrofit program that would be phased in over a period of several years.

The order called for three major modifications:

- Existing and newly built pressure tank cars used to transport such flammable gasses as propane, vinyl chloride, and butane must have both additional thermal protection and increased protection for the ends, or heads, of the tanks.
- Cars used to transport anhydrous ammonia must have additional protection for the tank heads, such as a steel shield.
- All cars carrying hazardous contents, no matter what kind, must be equipped with special couplers designed to resist breaking apart, so that one car can't come loose and puncture the next car.

A series of disastrous accidents during 1978 involving deadly chemicals showed the problem to be even more acute than had been realized, and the decision was made to speed up the safety improvements.

The installation of special couplers and head shields on tank cars carrying anhydrous ammonia has been completed. Approximately 80 percent of the cars used to transport propane and other liquefied flammable gases have been refitted, and the remaining 20 percent must be completed by the end of this year.

FRA is committed to taking every action necessary to reduce the number of rail accidents, especially those involving hazardous materials. The safety measures included in the tank car retrofit program now nearing completion should be at least 95 percent effective in eliminating serious accidents involving pressure tank cars.

The next step is to bring total rail safety as close to the 100 percent mark as is technically and humanly possible.

JoAnn Sloane is on the staff of the Federal Railroad Administration's Office of Public Affairs.

Riding the Rails To See if They're Safe

By Wilbur Martin

If trains are going to run safely, their tracks have to be in good shape.

The rails have to be aligned properly, and they can't have any bumps or warps or loose pieces that could cause a derailment.

The problem is that there are 150,000 miles of track in this country classified as high-speed lines—which means that trains are supposed to be able to go over them at more than 30 miles an hour. How can all these miles be checked frequently enough to detect defects before they become serious?

With some old-fashioned rail cars loaded with space-age technology, that's how.

The Federal Railroad Administration's Office of Safety operates a track geometry program that covers the 150,000 miles of track every two years. In 1979, the three special monitoring units, which are located in three different geographical regions, checked 63,000 miles. Two of these units consist of two rail cars each, one car carrying sophisticated monitoring equipment and the other providing office space and room for support equipment. The third unit uses a single car that carries everything.

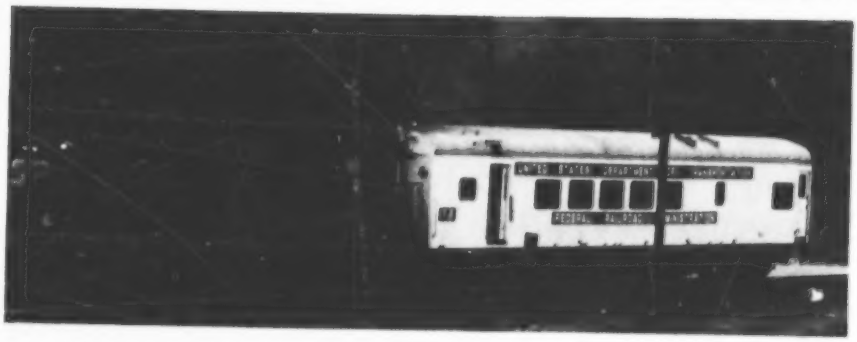
Each year, the track geometry survey office under Russell E. Bunker blueprints a year's operation. Once the plan is set, the special safety inspection units are hitched to locomotives of the line whose rail is being checked.

Operated by Ensco Inc. of Springfield, Virginia, under contract to FRA, these units can check up to 300 miles of track each day, depending upon how heavily that line is being used for regular traffic. As the cars roll along, sensors mounted on the underside generate electronic voltages. These voltages are collected at one-foot intervals and then fed into an on-board computer. The sensors measure track width, surface uniformity, alignment, elevation, and warp. An oscillograph gives the people riding in the car an immediate view of the data, and a printout is made simultaneously. The data are also stored on magnetic tape.

All of the data obtained by these highly sophisticated sensors are useful to railroad planners to pinpoint sections of track that will require long-range maintenance.

"Officials of the railroad whose track we are inspecting ride right along with the Ensco crew and our own inspector," Bunker says. "If there is anything wrong with the track, the ties, or the roadbed we have checked, they have the information immediately."

All through the year, the three safety inspection units are riding the rails to keep them safe.



FRA has three special rail cars (one of which is shown above) loaded with sophisticated equipment for monitoring the condition of tracks across the country.

Below, inside one of the cars, an FRA track safety inspector, sitting in front of the center window, watches as an oscillograph shows him the data being recorded by sensors mounted underneath the car.

Wilbur Martin is on the staff of the Department of Transportation's Office of Public Affairs.

FRA's Transportation Test Center Looks for Ways To Save Energy

By Preston Lockridge and Rick Jenney

Out in the middle of the Colorado prairie, miles of twisting track converge on a futuristic complex of black-and-white buildings. Inside and out on the tracks, engineers perform tests that promise to have electrifying results.

The building is the Department of Transportation's Transportation Test Center, where performance and durability testing is being done on electric locomotives, light rail vehicles, electric automobiles, solar collectors, and even windmills. All this is part of government efforts to combat the energy crunch.

As America's crude oil supply has become less certain, transportation planners have tried to shift people away from petroleum-dependent modes of travel toward vehicles using more flexible forms of energy.

Certainly no form of energy is more flexible than electricity, which can be derived from coal, natural gas, moving water, nuclear fission, the sun, the wind—and even petroleum. Electricity is therefore dependably and readily available in many areas, a fact that has spurred recent interest in electrifying American transit.

The logical focus was on rail transit, so the spotlight fell on the principal rail test facility in the country: the Transportation Test Center.

The center and its 46 miles of test track are located on a 52-square-mile site outside Pueblo, Colorado.

Operated by the Department's Federal Railroad Administration, the Test Center was created in 1971 as a place to conduct research on high-speed ground transportation. For three years, the center tested state-of-the-art rail vehicles buoyed by air cushions or propelled by linear induction motors at hundreds of miles per hour.

Since 1974, however, the center's mission has been altered to focus on conventional railroad systems and, increasingly, specific programs for saving energy and converting to electricity.

The Test Center recently electrified 15 miles of its test track so it could evaluate Amtrak's new AEM-7 lightweight electric locomotive and various pantograph designs (the flexible frame on top of the locomotive that transmits electricity from the wires overhead).

The AEM-7 is scheduled for heavy use in the Northeast Corridor. After performance testing to determine how much current is needed for various speeds, the AEM-7 will be subjected to a grueling endurance test.

"We're running a simulation of the Northeast Corridor profile between Washington and Boston," says Bill McCutchon, test manager at the center. "With various stops and starts, we'll run it about 16 and a half hours a day, six days a week, for 250,000 miles. Amtrak tells us this represents two years of average service on that route."

Also under evaluation at the center are rapid rail systems (usually known as subways) and light rail systems (modern versions of the trolley) that will be used in urban areas. There are currently ten cities in the United States with rapid rail systems in operation or various stages of construction and ten more cities either operating or planning light rail systems.

To ensure that this transit technology goes into operation smoothly, DOT's Urban Mass Transportation Administration now requires thousands of miles of testing at the center under all sorts of conditions for new transit cars.

"UMTA wants the cities to make use of the facility to test their systems and find all the bugs *before* they go into actual service," says Gunars Spons, director of UMTA programs at the Test Center. "Many of the new mass transit contracts include money for evaluation at the center, since many cities can't do the tests on their own property."

For example, the cars for the Boston system's Blue Line were designed to run at speeds up to 60 miles per hour. Since none of the Boston system is presently engineered or maintained for speeds above 40 miles per hour, the new cars were tested at Pueblo.

Not all of the energy-related research

The Transportation Test Center is being used by the Department of Energy for tests to determine the amounts of electricity generated by windmills at different speeds.

at the Test Center is connected directly with transportation, however. The U.S. Department of Energy provided funds for the installation of 14,000 square feet of solar collectors and associated equipment to heat and cool the center's warehouse laboratory facility. The high percentage of sunny days in the Pueblo area and the testing equipment located there make the Test Center a convenient place for testing solar projects.

The Department of Energy also uses the center for controlled wind velocity tests of small wind energy conversion units—windmills, that is. By mounting the windmills on a rail flatcar pushed by a locomotive, engineers can accurately measure the amount of electricity generated at different wind speeds.

While employees at the Test Center work on energy-efficient technology all day long, they also realize that energy conservation begins at home. They have formed carpools for the 21-mile drive out to the center and have started taking advantage of the center's vanpool program.

During the first several months of 1980, after President Carter had set the goal of reducing vehicle mileage by ten percent at federal facilities, the Test Center went past that mark, reducing mileage by 20 percent.

Some of the steps taken to lower gasoline consumption by 20,000 gallons over a seven-month period included reducing the number of vehicles in the center's fleet, using more fuel-efficient models, and encouraging employees to use the on-site taxi service.

Early this year, five conventional autos in the center's motor pool were replaced with minivans purchased as part of the Department of Energy's electric and hybrid vehicle demonstration program. These electric vans are used for transportation around the test center.

"Energy conservation is one of the near-term solutions to today's energy problems," says Edward Mathews, director of the Transportation Test Center. "At the center, we have investigated all practical means to reduce energy consumption, and we are actively and continuously putting cost-effective conservation methods into operation."

Preston Lockridge is public affairs officer for the Transportation Test Center in Pueblo, Colorado; Rick Jenney is an intern with the Department of Transportation's Office of Public Affairs.

Above, personnel at the Test Center are getting around the site in five electric vans as part of a Department of Energy demonstration program

Above right, the Center's warehouse laboratory facility has 14,000 square feet of solar collectors on its roof to provide heating and cooling.

Right, state-of-the-art rail cars are undergoing tests at the Center.

Photos from Transportation Test Center

The Railroad and Its Environment

This spring, as part of the Department of Transportation's policy to encourage well-designed transportation facilities and equipment, the Federal Railroad Administration conducted the first of what it hopes will be a series of design awards programs.

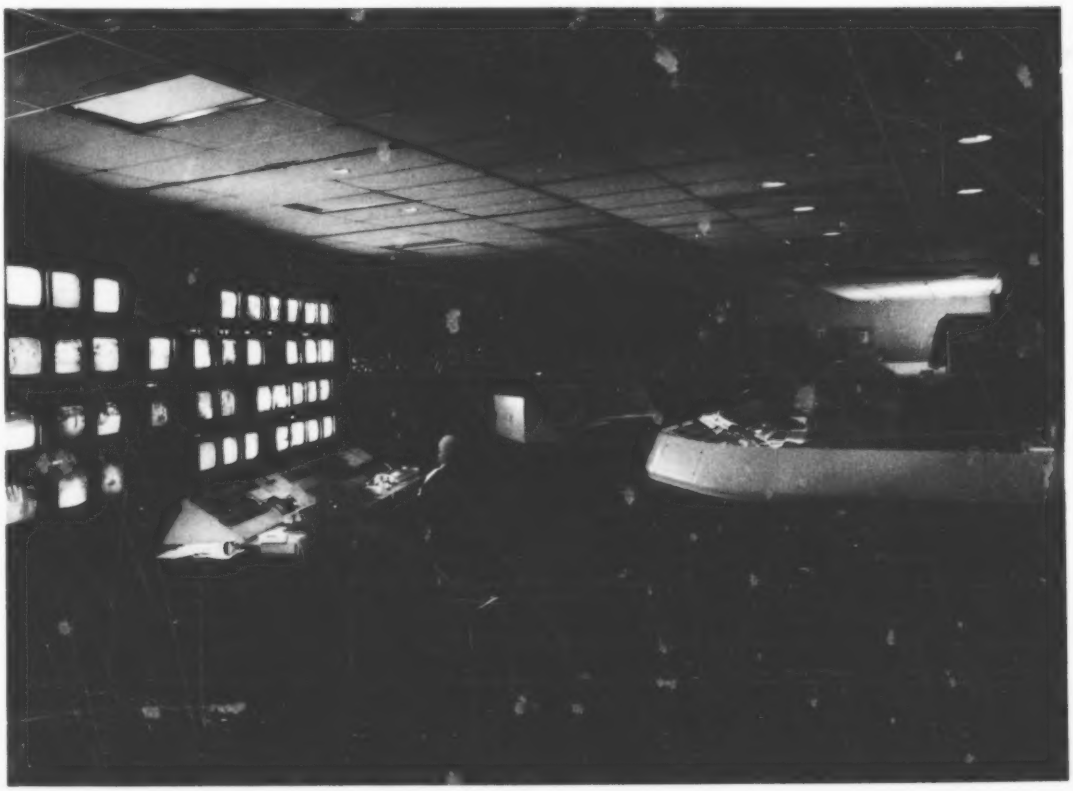
Nearly 60 entries in a wide variety of categories came in from all across the country and were given to a panel of experts for judging. The judges were Stanley Allan, president of Harry Weese and Associates, Architects; Donald Canty, editor of *The American Institute of Architects Journal;* Paul Weidlinger, general partner of Weidlinger Associates, Consulting Engineers; and Rogers E. M. Whitaker, author and contributor to the *The New Yorker* magazine on transportation subjects.

Rather than being ranked as first-, second-, or third-place winners, the best entries were given "Outstanding Achievement" and "Special Achievement" awards. This system produced several winners in some categories and none in others.

Many of the projects entered involved elements pertaining to more than one category. Therefore, some winners were recognized in several categories.

"The results of our first design awards program are very encouraging," said Federal Railroad Administrator John M. Sullivan. "The range of the entries was impressive, and the quality was consistently high."

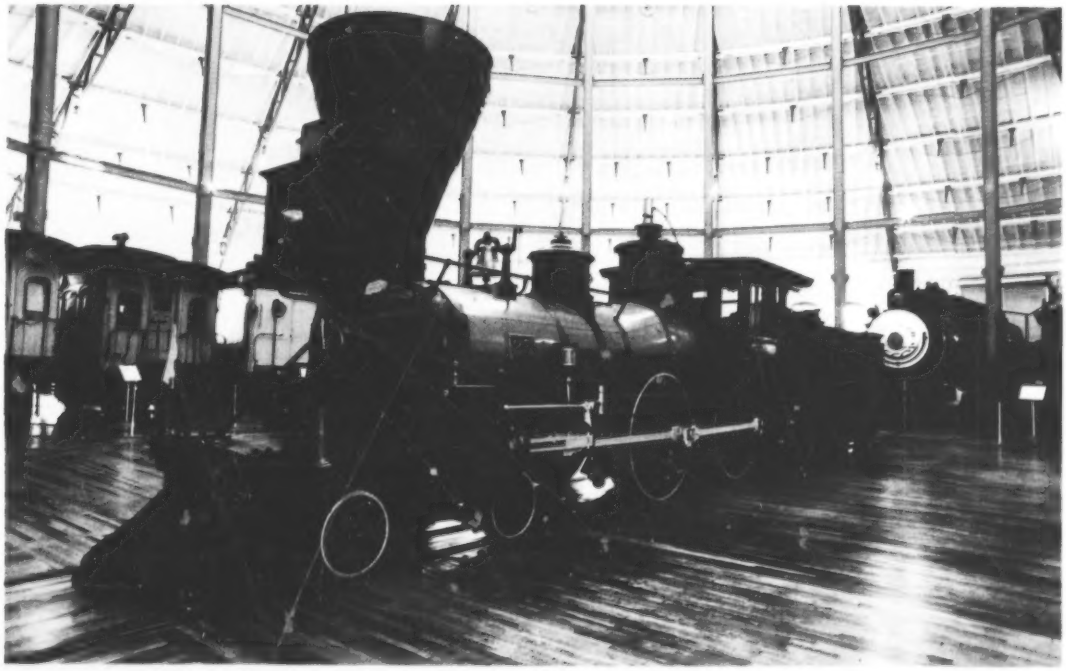
The next FRA design awards program is scheduled for 1982.

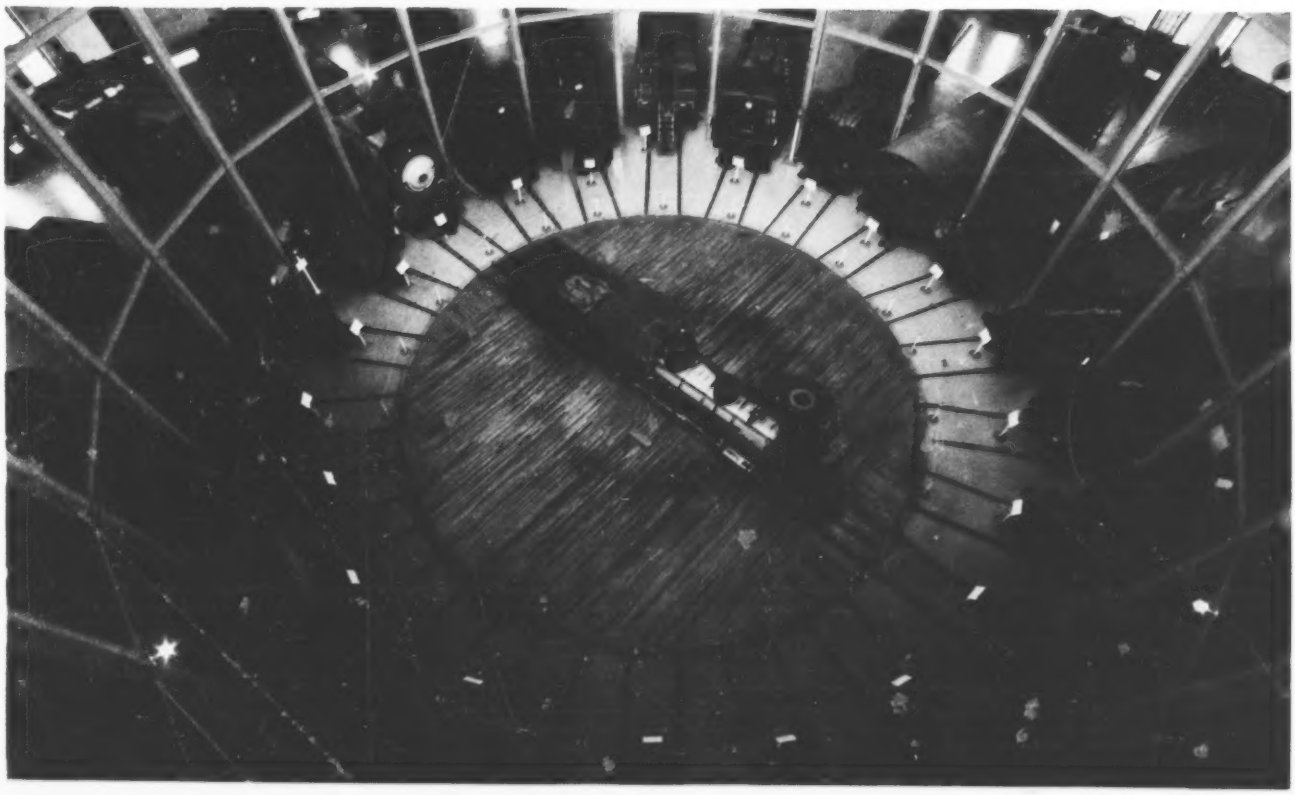


An Outstanding Achievement award in the "Equipment Design" category went to the John F. Hoban Operations Control Center of the Port Authority Trans-Hudson Corporation (PATH), a subsidiary of the Port Authority of New York and New Jersey. The Control Center brings together previously scattered operations into one centralized location, where key personnel can monitor all the systems involved in running PATH's 1,200 daily trains.

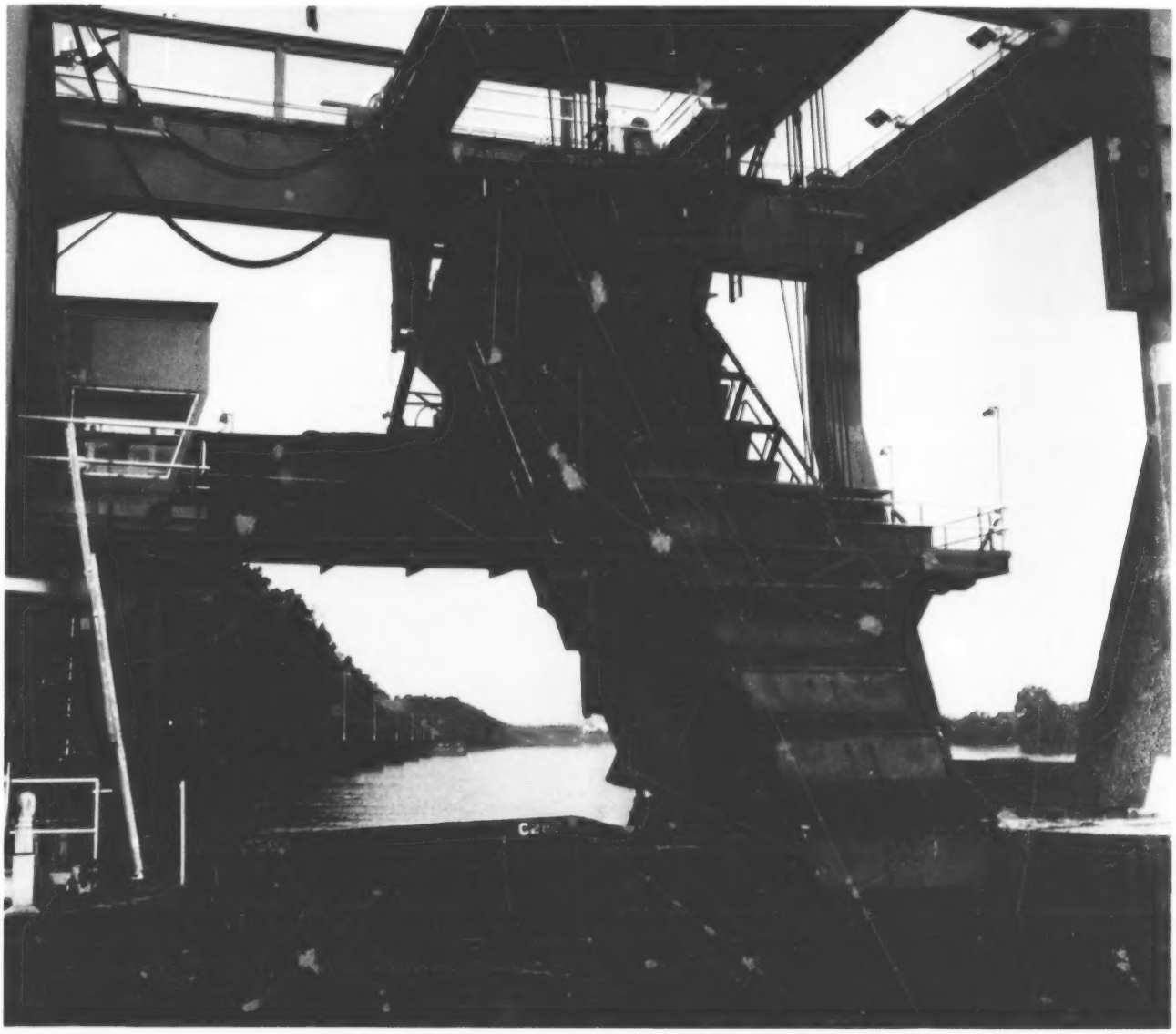
Design Awards Program

The Baltimore & Ohio Railroad Museum in Baltimore, Maryland, received an Outstanding Achievement award in the category called "Preservation and Enhancement of an Architecturally Significant Railroad Facility." The nine-acre museum complex is located on the site where the B&O established America's first rail depot and shops in 1828-1829. The structures have been carefully restored, down to matching of original paint colors, and nearby track areas have been transformed into park-like display sites.

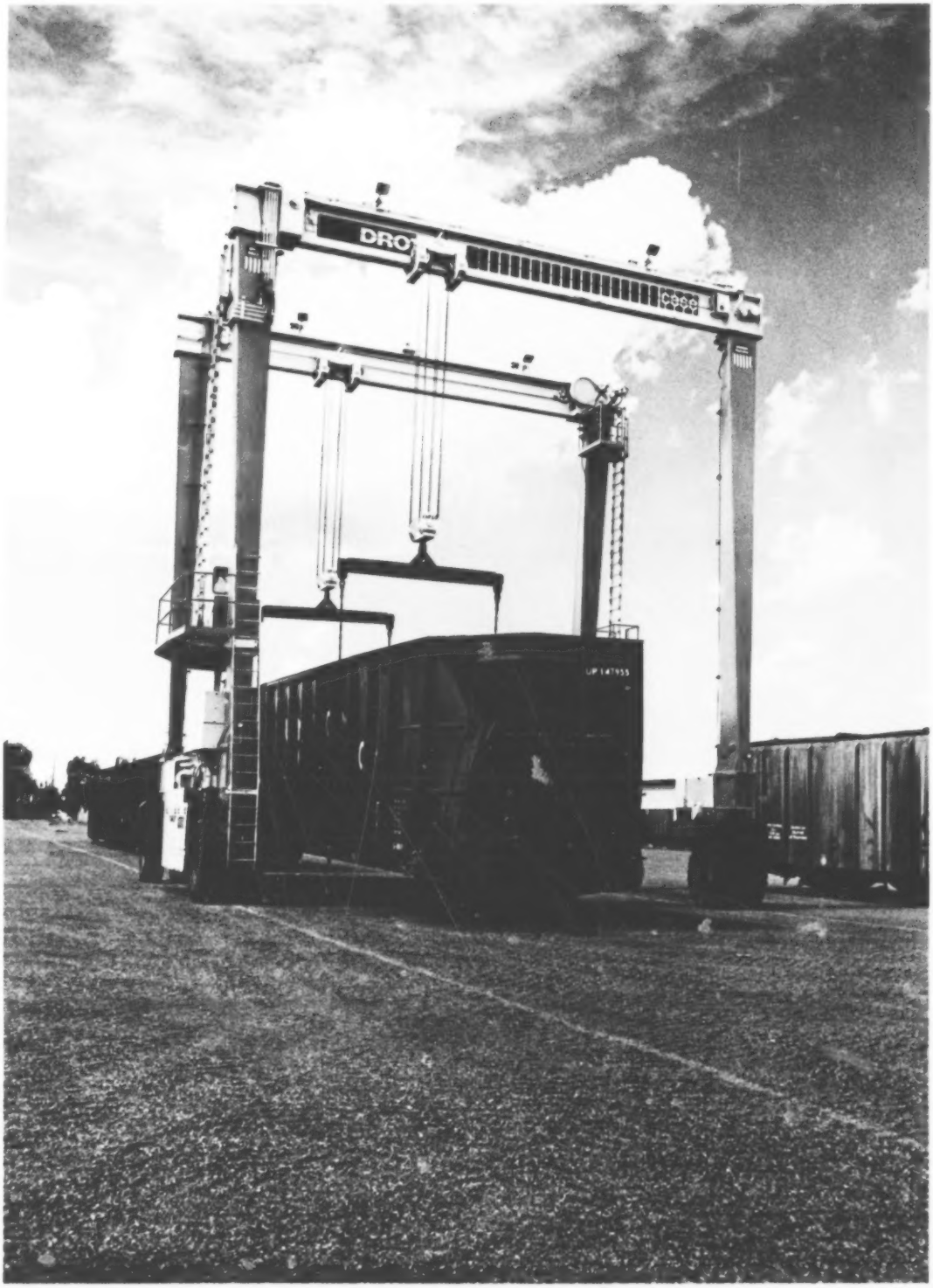




In the category called "Innovative Freight Intermodal Facility or Classification Yard," an Outstanding Achievement award went to the Pride Transloader in Pride, Alabama, designed by the Southern Railway Company and owned by the Georgia Power Company. The Transloader shifts coal from barges to unit trains.



A Special Achievement award in the "Equipment Design" category went to Union Pacific's Storage and Dismantling Facility in Pocatello, Idaho. At this 36-acre, 1,000-car facility, giant cranes move the damaged cars around the work area. Smaller cranes turn the cars on their sides for easy access to wheel assemblies, which are then removed for repair. The recycling of parts from damaged cars reduces costs and eliminates waits for new components.



By Wilbur Martin

Help for the Auto Industry

"We're going to have a competitive automobile industry, and we are going to work with that industry to achieve this goal."

This was Secretary of Transportation Neil Goldschmidt commenting on the next steps to be taken in what he terms "the greatest cooperative effort ever made by business, labor, and government" to solve a non-wartime problem.

The problem: How to help the slumping U.S. automobile industry and at the same time keep jobs for hundreds of thousands of American workers.

President Carter has provided a short-term solution, and it will be up to Secretary Goldschmidt and other Cabinet officers to recommend the long-term, fundamental changes that may be required.

In July, the President announced a six-part program touching on regulatory, tax, and trade measures that will give immediate help to the troubled auto industry. These actions came as the result of a report from a task force headed by Goldschmidt, prepared at the President's request after he had received pleas for aid from automobile manufacturers, automobile unions, dealers, and suppliers.

The reason for their concern was simple:

Hit by an energy shock last year, U.S. consumers had reacted to soaring gasoline prices by an almost overnight turnaround of traditional buying habits. From a preference for large or medium-size cars, they began buying in record numbers the smaller, more fuel-efficient kind of vehicles that have been popular for years in Europe and Asia.

Caught with limited production facilities for small cars, U.S. manufacturers were faced with a crash program to convert existing plants or build new ones, at huge expense. In the meantime, foreign car manufacturers, with excess production capacity, were more than willing to step into the gap. Foreign import sales captured 28.4 per cent of the new car market in May, continuing a steady rise. Sales of U.S.-made cars dropped, and as many as 700,000 workers were laid off in the auto industry and the industries that supply it.

The car manufacturers, auto unions, dealers, and supplier industries all turned to the government for help—help they said was essential if they were to survive for two years until new production facilities for small cars would enable them to compete in the marketplace.

Karl Schumacher/The White House

President Carter meets at the White House with (left to right) James McLernon, President of Volkswagen USA; Treasury Secretary G. William Miller; Douglas Fraser, President of the United Automobile Workers union; Philip Caldwell, Chairman of Ford Motor Company; Secretary of Transportation Neil Goldschmidt; and Thomas Murphy, Chairman of General Motors (left foreground).

The President's six-part program, based on the Goldschmidt report, could amount to as much as $1 billion in savings and aid to the auto industry. The package includes these provisions:

- a cut-back on emission standards for high-altitude areas, an action that could save the industry $500 million
- tax breaks in the form of new depreciation guidelines for machinery and equipment
- from $200 million to $400 million in guaranteed loans from the Small Business Administration for auto dealers, hundreds of whom have had to close down
- about $50 million in aid to communities hurt by the closing of auto plants
- a request to the International Trade Commission to speed up its hearings on a request from the United Auto Workers union that imports of Japanese cars be restricted
- creation of a permanent Auto Industry Commission—composed of representatives of labor, business, and government—to provide a forum for continuing talks on what to do next.

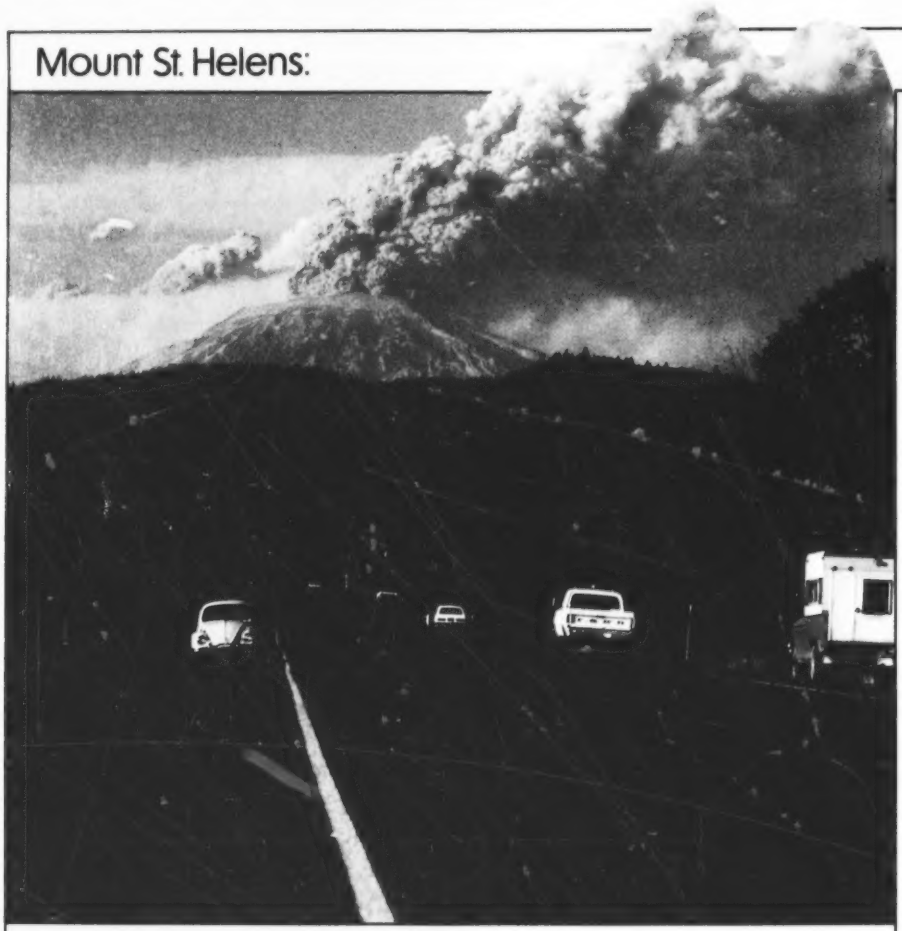
Secretary Goldschmidt is also working on another study requested by the President—this one a long-range look at the problems of the auto industry and those other industries that supply it, such as rubber, glass, plastics, electronics, and aluminum. A report on this study should be completed this fall.

Until then, Goldschmidt will continue to be involved in helping the auto industry get through the difficult years between now and 1982-1983, when more than seven million of the smaller cars U.S. consumers are demanding will be rolling off U.S. production lines.

"The auto industry is basic to this country's economy and to our national security," Goldschmidt says. "I believe that our efforts over the next few years can produce an auto industry that not only will regain its competitive position but will also be completely re-tooled and capable of exporting American-built autos to the rest of the world.

"That should be our goal."

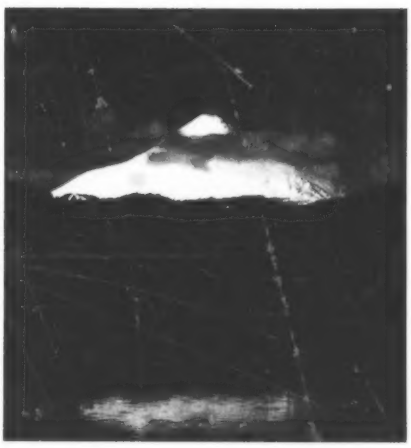
Mount St. Helens:



Pat and Tom Leeson / Photo Researchers Inc.

Buried Highways, Clogged Rivers, And Damaged Planes

By Clyde Linsley



Pat and Tom Leeson / Photo Researchers Inc.

Above, drivers on a highway near Amboy, Washington, pulled off the road to watch the May 18 eruption of Mount St. Helens.

Right, a view from the Yale Reservoir in southwestern Washington shows Mount St. Helens in early April, after the mountain had started rumbling but before major eruptions blew its top off.

As Larry Patella remembers it, he was driving along the Columbia River that Sunday, May 25, when huge gray spots began to spatter on his windshield. They were thick and wet and sticky.

My God, he thought, it's raining mud.

It wasn't mud, of course. It was volcanic ash, mixed with steam and rainwater, which is a different substance entirely.

By now, just about everyone in the Pacific Northwest can tell the difference. Mud is the stuff that washes downstream after an eruption and drags along trees, houses, bridges, and anything else that stands in its way. Ash is the stuff that falls from the sky like a summer snow and covers roads, wheatfields, and forests with a fine gray blanket. Ash is the stuff that gets into automobile transmissions, air filters, and valves. Mud is the stuff that closes roads and silts up rivers.

The residents of the Pacific Northwest are accustomed to living around volcanoes. The entire Cascade Range is volcanic in origin, and most of the major peaks in the range are at least potentially active. Mount Rainier probably erupted in the 1820s or 1830s. Mount Hood blew several times in the mid-1800s. Mount Lassen, in California, erupted violently in the early years of this century, and Mount St. Helens herself erupted in 1857.

Most of the time, the Cascades are friendly, or at least docile, neighbors, meant to be skied and climbed upon rather than feared. When Mount St. Helens showed her ugly side this spring, few were ready for the destruction and the disruptions that would follow.

By the end of June, damages were estimated at $2.7 billion and were expected to rise still higher. Twenty-five persons had died, and 43 more were missing and presumed dead.

Transportation, like most other human systems, was disrupted seriously by the eruptions. As local, state, and federal transportation officials worked to restore service, they learned some things that may be useful in the future. One thing they learned is that there's a lot we still don't know about volcanoes.

Consider the question of volcanic ash, by any measurement the most serious transportation problem left behind by the mountain:

Volcanic ash varies a bit from mountain to mountain, but it's basically a fine-textured, highly abrasive form of silicon oxide. It's light in weight, like talcum powder. When dry, it blows around like dust. When wet, it turns

gummy and adheres to surfaces. It is nearly impossible to dispose of, and even a minute quantity—as little as an eighth of an inch—can make a road almost impassable.

When the mountain first blew off on May 18, vast quantities of ash were carried by the prevailing winds over a widespread area. It settled on crops, on houses, and on about 37,000 miles of federal-aid and "off-system" roadways, and it virtually defied removal.

"Many ash removal techniques have been tried, but none seem to be very fast or effective," DOT's Assistant Secretary for Budget and Programs Mortimer L. Downey told a Senate committee recently. "The Washington Department of Transportation reports that the best removal technique seems to be a very expensive and slow method involving multiple trucks with plows, water sprayers, and brooms. Removal progress under this method has been at a rate of only about two lane-miles per hour."

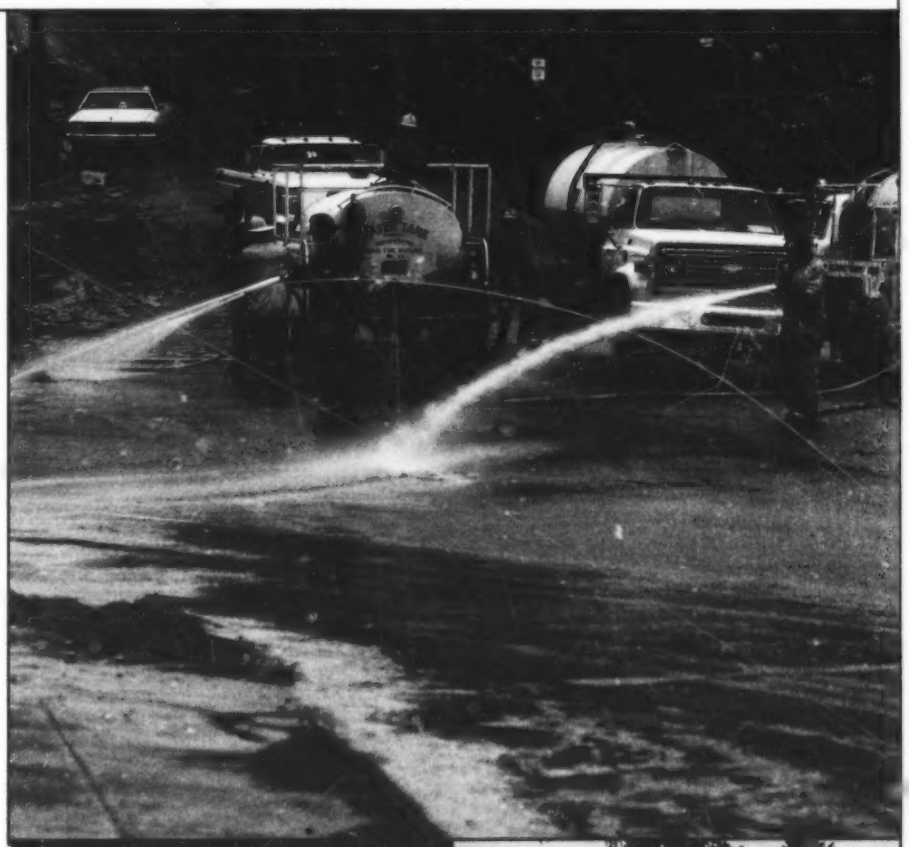
M. Eldon Green, Deputy Regional Administrator in Portland for DOT's Federal Highway Administration, echoes this sentiment:

"They're still cleaning it up, and they haven't found anything that works very well. The volcano didn't do a lot of physical damage to highways in the area, but the states are going to be faced with enormous increases in the operational costs of keeping the roads open."

Preliminary data indicate that the volcano may have created a need for as much as $100 million in emergency roadwork, and about $35 million of that amount will be needed for removing the ash. Even after so much is spent, the residue of volcanic ash is likely to remain in the vicinity, blowing back onto the roadways with every windstorm and plaguing motorists for years to come.

Every motorist who had the misfortune to drive through an area where volcanic ash fell has his or her own stories about the stuff. Because of its fine texture, the ash quickly clogged up automobile air filters and oil filters. Because of its abrasive qualities, it ground down transmissions and engines. Frequent changing of oil and filters was the only thing that seemed to help, and it helped only a little.

Nor were other forms of transportation immune from the effects of the ash. A small general aviation aircraft, bound for Missoula, Montana, passed through the edge of the ash cloud and was forced to land near Spokane. All the paint had been rubbed off the plane's leading edges and its tail, and airport employees pulled out handfuls of ash



David Falconer Photo Researchers Inc.

Cheryl Haselhurst, The Vancouver Columbian

David Falconer Photo Researchers Inc.

Above, cleaning up the tons of ash that fell on Washington and Idaho was a laborious and time-consuming process.

Left, powerful mudflows and floods following the eruptions wiped out some roads and bridges and damaged others.

Mount St. Helens:

Larry Brown

Two dredges, the Biddle and the Oregon, work to open the channel in the Columbia River, which was clogged so badly by ash and mud that shipping came to a halt.

from behind the craft's air filters.

A civilian C-130 transport passed through a heavy ashfall near Olympia on May 25 and was forced to make an emergency landing near Tacoma. Two of its engines had to be replaced.

In addition to stripping paint, disabling engines, and pitting windshields on passing aircraft, the ash fallout also halted operations at virtually every airport in its path. More than 100,000 tons of ash had to be removed from Spokane International Airport before service could be restored.

To minimize the dangers to aircraft and air travelers, DOT's Federal Aviation Administration established two special emergency air traffic control centers. At the Auburn Air Route Traffic Control Center south of Seattle, controllers directed regular commercial and general aviation aircraft away from a restricted emergency corridor in the vicinity of the mountain. Meanwhile, at the small town of Toledo, Washington, FAA moved in a mobile control tower to deal with emergency aircraft, news media, and others who needed to fly into the disaster area. After the second eruption on May 25, this mobile control tower was shut down by heavy ashfalls in the area.

By any measurement, the worst-hit areas were eastern Washington and Idaho, but there were substantial transportation disruptions along the west coast as well. When ash and mud and logs came sweeping down the Toutle and Cowlitz Rivers, they ended up in the Columbia River, silting it so badly that deep-draft shipping at several Columbia River ports was brought to a halt. At the Port of Portland, 33 ocean-going vessels found themselves unable to leave because of the silt that reduced the river's navigation channel from a depth of 45 feet to about 15 feet for a distance of about seven miles.

Larry Patella, who is dredge manager for the Port of Portland, immediately dispatched the port's own hydraulic dredge, the Oregon, to begin work on clearing the channel. Commercial dredges were called in from all over the west coast, and the U.S. Corps of Engineers brought in three dredges of its own.

Within five days, limited shipping was restored on the river, but Patella estimates it will be several months before the channel is back to its original depth.

"We're having to cut up pieces of the mountain that were dragged downstream by the flood," he says. "It's chewing up our equipment."

The flood of ash, sand, and melted glacial ice swept downstream at about 30 miles per hour, and the force ripped a number of navigational aids from their moorings.

"Only one navigational aid was lost permanently," says Captain A. D. Grantham, chief of operational readiness to Admiral Charles E. Larkin, commander of the Thirteenth Coast Guard District in Seattle. "The others we had back in position within 24 hours."

The Coast Guard also established a temporary vessel control system, to keep up with ship traffic in the river, by borrowing a couple of communications channels from the Bonneville Power Administration.

The Federal Emergency Management Administration, an organization that includes representatives from all federal departments, has primary responsibility for coordinating the federal government's responses to a natural disaster. Admiral Larkin is the Department of Transportation's emergency coordinator.

Larkin and his staff worked to make sure that DOT's efforts to assist the residents of the area didn't conflict with the actions of other agencies. In some instances, this meant putting DOT employees to work at tasks they wouldn't normally be performing. Coast Guard search-and-rescue helicopters and personnel helped the Cowlitz County sheriff's office rescue survivors of the May 18 eruption during the hours immediately following the explosion.

Some unusual measures were required, however, because Mount St. Helens was an entirely new experience.

"This disaster has been different from most," says Captain Grantham. "Most emergencies happen quickly, and then you spend weeks getting over them. This one just keeps happening over and over again."

As if to emphasize that point, on June 13 the mountain erupted again. The wind blew toward the southwest, and residents of the Portland area—and of several surrounding counties—were bombarded with ash and rock. The fallout forced the cancellation of a number of early morning flights at Portland International Airport.

The experience gained from these eruptions may come in handy. When Mount St. Helens erupted in the nineteenth century, it continued to blow off sporadically for another 20 years.

Moreover, the U.S. Geological Survey says it's possible that some of the other major volcanoes of the Cascades—Hood, Rainier, Baker, Lassen—may follow suit during the next few years. That was the pattern in the 1800s; it may well be the pattern again.

Whether St. Helens' neighbors erupt or not, residents of the Pacific Northwest will be looking anxiously at the sky for years to come.

"Viva Libertad!"

Coast Guard Helps Refugees Get to Key West Safely

By Rick Jenney

Cubans already living in the United States flocked to Key West to wait for reunions with relatives and friends making the trip over from Mariel.

By day they stood in endless lines under a hot sun near the docks. At night they slept crowded together on cots.

They hadn't quite reached the good life yet, but for these refugees it was the beginning of an adventure that, for whatever reasons, they had chosen over life in Cuba. In less than two months, more than 100,000 Cubans made that choice and funneled into the United States through the tiny island of Key West at the southernmost tip of Florida.

"Some people aren't sure they like the idea of so many foreigners coming into this country; I know I sort of felt that way before I went down there. But then you see them—thirsty, hungry, tired, seasick, sometimes injured—and you can see in their eyes that they're worried and scared. You realize that they need help right away, and suddenly you don't care much about anything else."

Brice Kenny talks passionately about what he has just seen. For two weeks in late May and early June, Kenny, a Photojournalist Second Class in the Coast Guard, was in Key West documenting the Cuban refugee operation.

"The first contact the refugees had with the United States was the Coast Guard," Kenny says. "Either they'd see the Coast Guard cutters while they were crossing or they would actually be towed in by the cutters—all with American flags flying."

To handle the unexpectedly large outpouring of people, the Coast Guard assigned an additional 17 cutters, five patrol boats, 16 aircraft, and more than 1,000 servicemen and women to its Seventh District, which includes all of Florida. On June 3, President Carter ordered the call-up of about 900 reservists to replace those on regular duty who had been shifted to help with the sealift.

Coast Guard personnel came from virtually every part of the country to

assist in the refugee operation. Aviators from as far away as Alaska were flown in to relieve the pilots who had been working around the clock at the temporary Coast Guard air station set up at a nearby naval base. Personnel from Cape May, New Jersey, worked side by side with others from the Marine Safety Office in Portland, Oregon.

"Many of the people that I talked to had worked countless hours, gone without sleep, gotten up in the middle of the night to pull refugees out of the ocean in bad weather, and done all kinds of other jobs—just running on reserve energy," Kenny says. "It was hard work and dangerous work, but it was what they've been trained to do.

"Of course it's rewarding, and the sort of thing you don't forget. The looks on the people's faces as they were pulled from the water had to give our Coast Guardsmen a great deal of satisfaction."

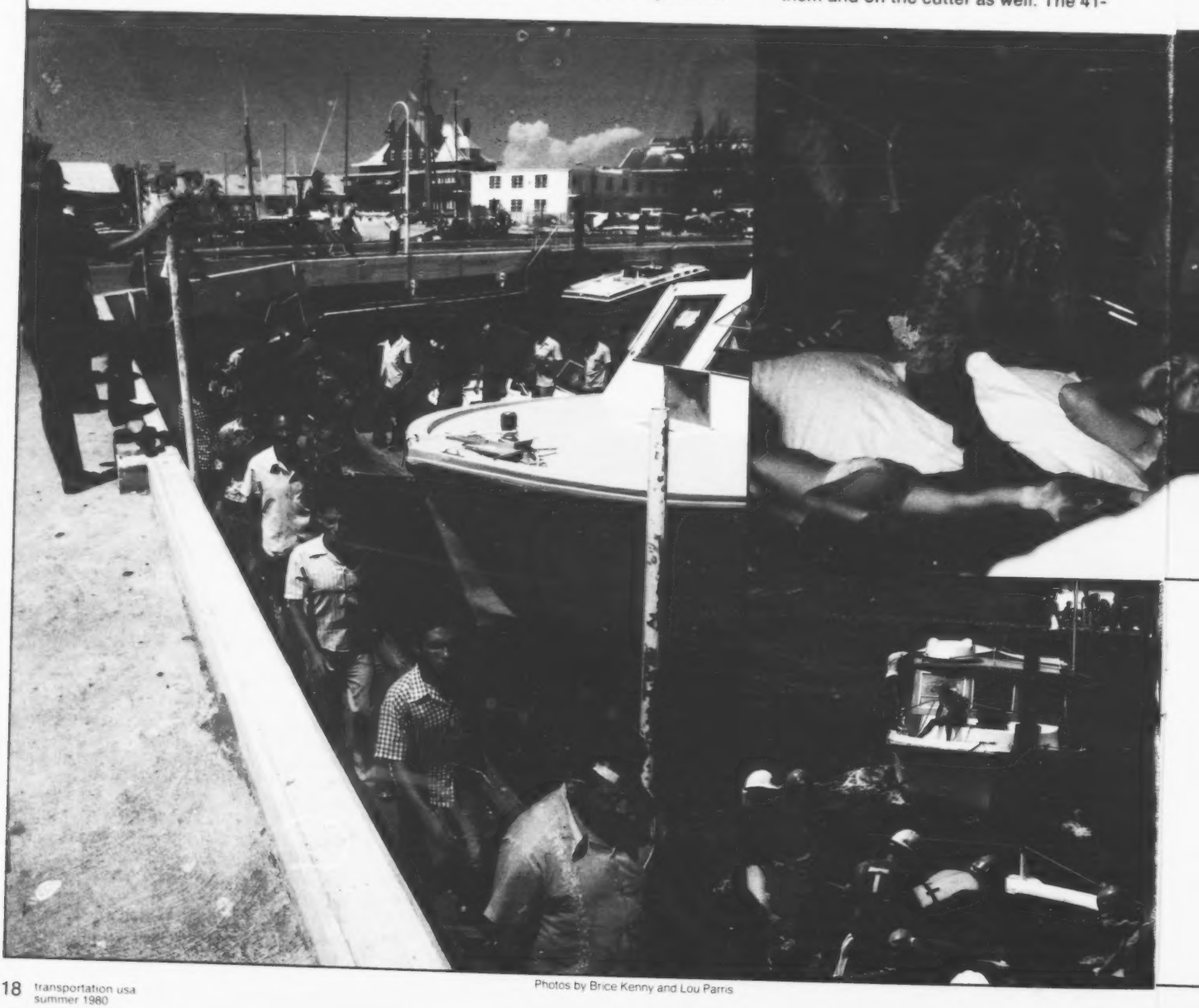
The sealift began on April 21, but was actually triggered three weeks earlier when six Cubans stormed the Peruvian embassy in Havana, demanding political asylum. After thousands of other Cubans joined them on the embassy grounds, the Castro government began allowing people to emigrate.

Large numbers began making their way to the harbor at Mariel, near Havana, where they crowded onto American boats. The going rate for passage to Key West soon reached $2,000, which prompted still more American boatowners to sail to Mariel to pick up more refugees. At one point, over 2,000 boats jammed the harbor at Mariel waiting to pick up passengers.

"The whole Coast Guard operation was very well organized," says Kenny, "which was remarkable given how big and how unexpected the mission was."

A relay team of ships was set up to patrol the straits between Key West and Miami to herd the small craft toward their destination. The Coast Guard's 378-foot high-endurance cutters cruised about fifteen miles from Cuba and formed the first line, patrolling and responding to maydays. The 210-foot cutters formed a second line closer to Key West, followed by a line each of 95-foot and 82-foot cutters.

"It was sort of a chain. A high-endurance cutter would meet the vessels and tow them part of the way. Then the 95s and 82s would tow them right into Key West. Sometimes one Coast Guard vessel would take six or seven boats in tow, with refugees jammed on all of them and on the cutter as well. The 41-



Photos by Brice Kenny and Lou Parris

foot patrol boats were the last link in the chain; they towed the vessels right into the anchoring area."

The United States government's original offer to receive a total of 3,500 refugees fell by the wayside, and by the middle of May, more than that number were arriving each day.

Ensuring safe passage across the straits was no small feat for the Coast Guard. Virtually everyone who has been to the scene has remarked on the unseaworthiness of the crowded boats being sailed the 105 miles across open, shark-infested ocean.

"I would think twice about going out on a rough day on a lake in some of those boats," Kenny says. "A lot of them were homemade, and not only were they tiny, but many of them were also filled with dry rot. The deck fittings where the ropes were tied down would sometimes just pull right out.

"You wonder how did these people do it—it's a very big ocean, and it gets rough down there." One storm with near-hurricane winds in late April capsized dozens of jam-packed boats. Only the stalwart efforts of the Coast Guard kept the lives lost down to two.

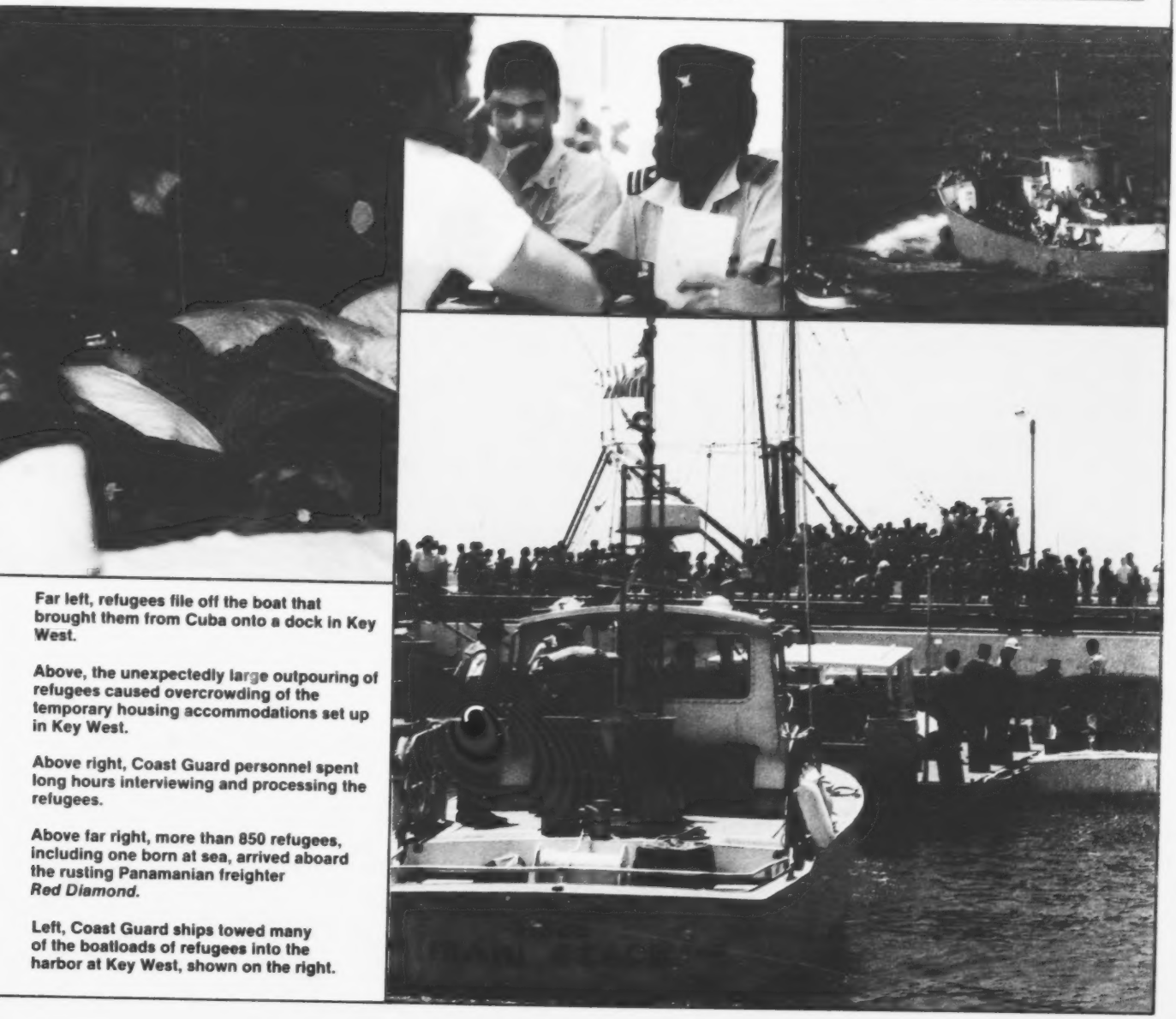
The sheer numbers of refugees kept the Coast Guard working feverishly, but the task was not without its benefits. "A lieutenant who had been in the Coast Guard over ten years told me that the weeks he spent in Key West were the most rewarding thing he had done in his whole career," Kenny says.

"There's one scene I know I'll never forget. We pulled up to a 100-foot shrimper, a fishing boat, that was crammed with people. There wasn't another place to stand on the entire boat—people up on the wheelhouse and clinging to the rigging. When we got close—about eight or ten feet away—the people on the shrimper were holding up their babies, crying, and shouting, 'Viva Libertad! Viva Libertad!'"

By the middle of June the sealift had virtually come to a halt, as only 15 boats remained in Mariel harbor. According to news reports, a total of 113,434 refugees had arrived in the U.S. aboard 1,913 boats; another 652 boats had returned without passengers.

The largest Coast Guard operation since World War II began to pass into history, as the Cubans who made it across headed for new lives in a new land.

Rick Jenney is an intern with the Department of Transportation's Office of Public Affairs.



Far left, refugees file off the boat that brought them from Cuba onto a dock in Key West.

Above, the unexpectedly large outpouring of refugees caused overcrowding of the temporary housing accommodations set up in Key West.

Above right, Coast Guard personnel spent long hours interviewing and processing the refugees.

Above far right, more than 850 refugees, including one born at sea, arrived aboard the rusting Panamanian freighter *Red Diamond*.

Left, Coast Guard ships towed many of the boatloads of refugees into the harbor at Key West, shown on the right.

Getting Around Out in the Country

DOT Funds Will Help Provide Transportation in Rural Areas

By Don Glasco and Suzanne Shultz

Picture a country of 85 million people, all of whom live in rural and small urban areas.

Many of its citizens—especially the elderly, the young, the poor, and the handicapped—have serious problems getting around. They have to travel long distances just to meet their basic needs, and less than one percent of them have access to public transportation.

Is this country in Asia? Africa? South America? No, it's our own Rural America, and the public transportation needs of this isolated "country" are just now being addressed.

Some statistics help tell the story: 15 percent of all rural households, 57 percent of the rural poor, and 45 percent of the rural elderly do not own an automobile; only 31 percent of the nation's 20,000 towns with a population of 50,000 or less are served by a public transit system; and less than one percent of rural persons working outside the home use or have access to public transportation as a means of getting to work.

In 1978, Congress amended the Urban Mass Transportation Act of 1964 by adding the Section 18 program. Administered by the Department of Transportation's Federal Highway Administration, Section 18 is the first permanent federal program designed exclusively to assist public transportation in rural and small urban areas. During the program's first two years, $160 million have been set aside to help the states pay for rural public transportation services.

At its current level of funding, the program averages about one dollar per "non-urbanized" resident in the United States each year. But the program is growing, and many rural projects have shown that a little goes a long way.

Like the Carter County Rural Transportation Project in Oklahoma.

With only four small buses and a van, this system provides an entire county with public transportation. The rides are available free to all age and income groups, but so far the elderly and the handicapped have made up nearly 66 percent of the riders.

Based in the new Carter County Senior Citizens Complex in Ardmore, the system was started late in 1977 as a "rural highway public transportation" demonstration project. Its funding as a demonstration would have been cut off at the end of February 1980, but a grant of $51,000 from the Section 18 program, approved in March, allowed the system to continue operating for a third year.

Hank Kittrell, the original project director, guided the system through its shakedown period. "We started out as a totally fixed-route system," he says, "but I found out during the first year or so that you have to be flexible. You have to come up with a combination of fixed-route and demand response.

"We also ended up cutting back service in some areas of the county because we had to be cost-effective. When you have gotten the word out to areas and people know that the transportation is available but they still aren't using it, then you have to transfer your buses to other areas where they can be used more effectively.

"At first, we ran routes whether we had passengers or not. But when gas got so expensive, we stopped that."

Kittrell found that if people had transportation to a bus stop, they usually had transportation into town. "So we worked to make the rides comfortable enough and warm enough in the winter and cool enough in the summer to get people to ride with us," Kittrell says.

Kittrell's efforts to attract passengers paid off. After starting with 55 riders during its first month—December 1977—the project now averages 3,600

Betty Crowell

passengers a month. They ride in three minibuses, a maxivan, and one minibus with a wheelchair lift, which provides service for 70 to 80 persons in wheelchairs.

The buses run five days a week, 8:30 a.m. to 4:30 p.m. The towns on the routes (with distances from Ardmore) are Dickson, 10 miles; Gene Autry, 15 miles; Springer, 10 miles; Tatums, 45 miles; Ratliff, 42 miles; County Line, 45 miles; Graham, 26 miles; Wilson, 20 miles; Fox, 34 miles; Healdton, 23 miles; and Lone Grove, 7 miles.

Dena O'Guin, the new project director, originally served as the secretary and dispatcher for the system. Since Kittrell's move to another job, O'Guin has "really been doing it all. I'm very excited about taking over, although some people don't think a woman can do it.

"There is so much to learn, and these gasoline prices are killing us. Every 14 days, it costs us $600, but the money from the Department of Transportation will keep us going for the year. The rising costs from inflation have hurt

The Department of Transportation is providing money to help pay for public transportation in rural and small urban areas.

Everett Johnson / Lensman Photos

everybody, though, and there is an increased demand for the service."

Although the primary purpose of the system is to provide transportation, it has some interesting social side-effects. Betty Holley, who drives the van, says, "One of the things I think is real good is the way the people kind of get to know one another after awhile, and if someone doesn't show up, the others call to see how they are. Ordinarily, they wouldn't have anyone looking in on them and checking on them."

Holley thinks the system "has been a godsend for this area."

Many of the riders agree.

Lester Coyle, 76, used to drive around the county in a Rambler. "It got good gas mileage and I really liked it, but when I got this walker, I was afraid I couldn't use my legs fast enough anymore, so I sold it. You have to stop driving when it's not safe for yourself or other people anymore.

"My wife had to go into the nursing home two years ago. The van takes me to the center for lunch, then I go visit her every afternoon for two hours. The van takes me there, and then it takes me home. I couldn't go see her if it wasn't for the van."

James White, 84, quit driving when his eyes got bad. "A car wreck's what messed up my eyes—there's just a white fog mostly and things are blurry. The doctors can't fix it—said it jarred something in the back of my head that can't be fixed. Probably because I'm so old.

"I got to where I'd come up on cars faster than I expected, and I didn't see them. So I said, 'Bull, that's no good,' and I sold my car.

"I've been working around here since November of 1919. I was an automobile mechanic. I worked on them 65 years and never could fix one. That's a long time to work on something and not get it fixed!"

White has been riding on the Carter County transit system "ever since it's been started, darn if I know how long. All I got to do is just call them, and they'll come and get me. They treat me good. They've got me spoiled."

All the drivers for the system are required to take some special training—both on and off the job. First, they ride on the various routes for a couple of weeks, and then they drive for a week with another full-time driver accompanying them.

"We are orienting our drivers toward both caring about the maintenance of

Betty Crowell

Rural transportation systems provide a way to get around for those who don't have a car or can't drive, such as the old, the young, and the handicapped.

the vans or buses and caring about the needs of their passengers," O'Guin says. "There is a vehicle check list that the drivers must go through every morning—for example, tire pressure should be checked daily.

"And we have found that a vehicle is out of service a lot less often when you depend on the same mechanic. The drivers get to know the mechanic, and the mechanic gets to know the vehicle.

"We also realize how important it is that the drivers make the people feel wanted—not to make the service seem like a handout—to make the transportation available in every sense of the word to the passengers and not mold it to the project staff's convenience.

"Drivers play an important part," O'Guin believes. "They must understand and be sympathetic with the passengers."

One vital way the drivers prepare themselves to help their passengers is to take, on their own time, required courses in first aid and cardiopulmonary resuscitation.

On all the bus routes, riders need to be waiting at the town's municipal building or standing out on the highway if they want to catch a ride. Handicapped persons are picked up from and delivered back to their homes on Tuesdays and Thursdays, but they have to make reservations. Most people call several days or weeks in advance for rides to doctor appointments, therapy sessions, and the like.

"We also take the handicapped passengers out to do shopping at the shopping centers," says Betty Holley. "That's something they wouldn't be able to do otherwise, because they wouldn't want to ask anybody to go to that much trouble."

Lonnie Long is chairman of the board for the Carter County Senior Citizens' complex, a veteran of 25 years with the military, three years with the Federal Housing Administration, and 11 years as a local volunteer. Long has been a guiding force in establishing the activities center, the nutrition center, the health center, and the transportation service all together under one roof.

"Primarily, all these services are for people who just can't pay their own way," Long says, "so we have to establish a broad base of local community support. We have to establish all the contacts we can—Lions Club, Kiwanis, United Way. We're advertising right now to get more volunteers, just for two or three hours a day. And we're working on the paperwork to incorporate the board, which ought to help with our local fundraising."

The Carter County Rural Transportation Project—with its five little buses and vans and its 3,600 passengers a month—is just one example of the kinds of services across the country that will be receiving assistance from the Department of Transportation. By this fall, projects should be approved in 48 states and territories.

This is also an example of a case in which the federal, state, and local partnership is working—working to overcome the isolation and immobility of that important "country," Rural America.

Don Glasco is on the staff of the Rural and Small Urban Public Transportation Branch, Federal Highway Administration, and Suzanne Shultz is editor of The Sage Age, *a newspaper for senior adults published in Oklahoma City, Oklahoma.*

Little Planes Are Big Business

Commuter Airlines Are Growing and Prospering

By Clyde Linsley Jr.

Margaret Berg

Commuter airlines are carrying an increasing percentage of air passengers.

As you fly north from Boston, the densely settled suburbs begin gradually to thin out, and the terrain takes on a gently rolling pattern. Backyard swimming pools and landscaped industrial parks are replaced by stands of birch and maple. Warehouses give way to dairy barns; smokestacks are replaced by silos.

Eventually the rolling hills become small mountains, the forests become thicker, and the air becomes palpably clearer. To your right appears Lake Winnipesaukee, a 22-mile-long remnant of the great Ice Age. After about 45 minutes, the plane banks left, and a small airstrip appears between the mountains. In a few minutes you are in Laconia, population center of the New Hampshire Lakes Region.

Americans have been coming to the New Hampshire lakes since the eighteenth century to escape the heat of their steamy cities. For the past 20 years, hundreds have chosen to come by air, from Boston, aboard one of the 12-seater Piper Navajo Chieftains operated by Laconia's own Winnipesaukee Aviation.

But this summer, visitors will search in vain for the familiar Winnipesaukee gate at Boston's Logan International Airport, for Winnipesaukee Airlines no longer exists. During the winter, it was snapped up by Precision Airlines, a slightly larger airline based in nearby Springfield, Vermont.

To most air passengers, the differences between Winnipesaukee and Precision may seem insignificant. Both fly little planes to little places: Laconia, Pittsfield, Rutland.

In reality, however, the differences are far from trivial. Where Winnipesaukee was little more than a part-time, highly seasonal ferry service to a New England resort area, Precision provides regularly scheduled—and vital—air service between western New England and Boston and New York City, from which cities its passengers can make connections to anywhere in the world.

For Precision Airlines, named after a regional landmark, the Precision Valley of Vermont, acquisition of the Winnipesaukee routes was simply a logical extension of its own existing network. For the nation, the acquisition is one more sign that the commuter airline industry is growing up.

"The projections we see are that the commuter enplanement growth will continue in the next ten years at an average rate of 15 percent a year, bringing total enplanements in 1990 to 40 million passengers," Duane Ekedahl, president of the Commuter Airline Association of America, recently told an aviation audience. "If other segments of the industry continue to grow at their historic rate, the commuter portion of the total would increase from four percent to ten percent of total passengers enplaned."

Michael Sullivan

That result would not be surprising, for commuter airlines—the term loosely applied to a diverse assortment of airlines flying small aircraft on shorthaul routes—have long been the fastest-growing segment of the air transport industry. It is as if the nation's largest supermarket chains found themselves outpaced by the little grocery store on the corner.

Many close observers of the airline industry predicted that enactment of the Airline Deregulation Act would lead to increased concentration of economic power in the hands of a few industry leaders, with the size and financial resources to intimidate their smaller competitors. The early developments since deregulation became law in 1978 have been quite different. While a number of the larger trunk lines have been having problems in recent months, the smaller regional carriers have grown and prospered, and none have done better than commuter airlines.

More important, from the standpoint of air travelers, available airline service has increased since deregulation, and it has increased visibly at the smaller and medium-size airports served by commuter airlines.

As larger carriers pulled out of smaller cities where the existing traffic could not justify their large jet aircraft—a process that was well underway years before deregulation became law—eager commuter operators were waiting to fill the service gaps. Often, because they operated with smaller, more efficient aircraft, the commuters were able to provide more frequent and better service. In markets where a single flight with jet equipment might be losing money, a commuter plane might make three separate flights—and make a profit on each.

Ottumwa, Iowa, a city of 30,000, once had two flights a day from Ozark Airlines—both of them two-stop flights to Chicago. Today, with a commuter airline serving the city, there is non-stop and one-stop service not only to Chicago, but to Kansas City as well. And because it flies smaller aircraft than Ozark and can make money with fewer passengers, Mississippi Valley Airlines is able to provide five flights a day instead of only two.

The growth of commuter airlines has been enthusiastically endorsed by those who supported airline deregulation, for they envisioned that commuters would be a primary beneficiary of a relaxation of the regulatory system. A stringent system of regulation probably ensured some small cities of airline service, but the service was often provided grudgingly, and at inconvenient times, by airlines who felt—rightly—that their expensive jet equipment was being wasted. The system also required a costly subsidy program to offset the losses of the larger carriers.

"We have found that, in general, frequent service with small aircraft better serves the needs of small communities than one jet flight per day," Marvin S. Cohen, Chairman of the Civil Aeronautics Board, has said. The net gain of the growth of commuter airlines, he said, "is that 163 additional

markets are served by at least one more carrier" than had served them before deregulation.

The mushrooming growth of commuter airlines during the last ten years has led to an equally impressive growth in the industry that manufactures aircraft for commuter airlines. Therein, ironically, lies one of the commuters' greatest problems: a shortage of enough aircraft. Ekedahl says most suppliers are now one to three years behind on meeting their orders for new planes.

Related to the problem of availability is the problem of financing. In their efforts to expand and take advantage of their new growth opportunities, some commuters have had to stretch their resources to the limit. In the first full year following deregulation, in fact, commuter airlines effectively doubled the value of their entire fleet through the purchase of new aircraft. Financing problems are being alleviated to a great extent by federal loan guarantees and by financing assistance by suppliers, who have evidently concluded that

Dean Abramson

Tom Pantages

Passengers on commuter airlines have to get used to small—and unusually shaped—planes.

Robert Pontarelli

helping commuters purchase their products is quite a sound investment.

But other problems loom ahead—the sorts of problems that raise serious questions about the nature of the commuter airline industry and about its future prospects.

For example, as commuter airlines take on a larger and more important role in the transportation system, increasingly they are subject to regulations previously applied to major carriers. Commuter operators say they fear that being treated like big guys may force them to become big guys, if only in self-defense.

A particular bone of contention among commuter operators is a regulation that would require them to install anti-hijacking security devices at their airport gates, although light commuter aircraft, which are designed to be flown short distances, would seem to make highly unlikely vehicles for hijacking.

"There's not been a commuter airline hijacking since 1972," points out Tulinda Deegan, vice president for government affairs with the Commuter Airline Association. "Before 1972, there were five, and they were all in the Caribbean."

There are other problems—such as fuel availability—that must be dealt with. When one of the larger carriers stops flying into an airport, it usually takes its fuel supply contracts with it, leaving the commuter airline that replaces it with the predicament of finding its own sources at a time when few resources are available.

The largest problem commuter airlines face, however, is probably finding ways to gain customer acceptance. The most experienced air traveler sometimes recoils from the thought of flying in the kind of small, general aviation aircraft used by most commuter lines. Most of these lines also emit a small-business ambiance that can put off those travelers more accustomed to widebody jets and in-flight movies. Back when Winnipesaukee Airlines was flying to Laconia, for example, the copilot's seat in the cockpit was often occupied by a paying passenger.

It should be pointed out, however, that bigness is not always better, and commuter airline employees are likely to go out of their way to accommodate their customers.

Some concern has also been expressed about the safety records of commuter aircraft, and regulations have been designed and implemented to improve the situation. Since commuter aircraft make more takeoffs and landings than other commercial aircraft—and takeoffs and landings are the most dangerous part of any flight—their accident record is somewhat higher than that of the rest of the industry. In some respects, though, the bad press commuter airlines get on the safety issue is overemphasized. Flying on a commuter aircraft is quite safe compared to, say, driving to the same destination.

In any event, the prospects are great that commuters will become a more important factor in commercial aviation in the future than they are today—and they're already an important part of the industry. They serve twice as many airports as the larger airlines, and in 359 communities, they provide the only available air service. Last year they carried 12 million passengers, 75 percent of whom connected with another airline for the longer haul.

If for any reason the commuter airlines should begin to ail, a ripple effect would be felt throughout the entire industry. So far, fortunately, the patient seems to be getting along nicely.

Clyde Linsley is on the staff of the Department of Transportation's Office of Public Affairs.

DOT news briefs

Satellite Television Conference Discusses Public Transportation

Nine mayors and a transit authority chairman from cities across the country joined Secretary Neil Goldschmidt and ranking Department of Transportation officials on June 4 in a satellite television conversation about public transportation in the 1980s. The event was co-sponsored by the National League of Cities.

The 90-minute discussion focused on the creative use of mass transit by the cities to conserve energy.

Participating in the teleconference were Mayors Lee Alexander, Syracuse, New York; Richard Berkley, Kansas City, Missouri; Jake Godbold, Jacksonville, Florida; William Hudnut, Indianapolis, Indiana; George Latimer, St. Paul, Minnesota; Tom Moody, Columbus, Ohio; Lewis Murphy, Tucson, Arizona; William Stansbury, Louisville, Kentucky; and Ted Wilson, Salt Lake City, Utah; and Dan Arnold, chairman of the Metropolitan Transit Authority in Houston, Texas.

DOT Holds A 'Pool Party' On National Ridesharing Day

On May 15—National Ridesharing Day—the U.S. Department of Transportation held a "pool party" at its Washington headquarters building. The purpose of the gathering was to call attention to carpools and vanpools and to sign up participants.

A warm and sunny spring day provided a perfect setting for the activities. Between 11 a.m. and 2 p.m., live country music, balloons, flags, and straw hats created a festive and friendly atmosphere in the plaza. Banners were hung around the plaza designating 18 Maryland and Virginia counties, the city of Alexandria, Virginia, and the District of Columbia.

Beneath each banner was a table where party-goers could either sign up to ride in an existing pool or list an established pool in need of one or more riders. More than 800 signed up for rides, and many others matched themselves up on the spot.

Several van-leasing companies were on hand. Representatives of the Hertz Leasing Corporation said it was one of the best days they had ever had, with six vans leased during the three hours and leads obtained for several others.

for your information

Recent DOT Publications

Reports and Studies
(single copies available from office shown; please enclose a self-addressed mailing label)

America on the Move, January 1980; Federal Highway Administration, Office of Public Affairs.

The National Highway Institute—The First Ten Years, 1970-1980, January 1980; Federal Highway Administration, Office of Public Affairs.

The Federal-Aid Highway Program, February 1980; Federal Highway Administration, Office of Public Affairs.

1977 Nationwide Personal Transportation Study, Users' Guide for the Public Use Tapes, April 1980; Federal Highway Administration, Office of Public Affairs.

Federal Aviation Administration—Facts and Functions, May 1980; Federal Aviation Administration, Office of Public Affairs.

Proposed Final Environmental Impact Statement, Coal Line Project, May 19, 1980; Federal Railroad Administration, Office of Public Affairs.

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Urban Pedestrian Safety, Issue Paper, DOT HS 803 825, revised March 1980; National Highway Traffic Safety Administration, Office of Public Affairs.

Alcohol Countermeasures, Issue Paper, DOT HS 803 823, revised March 1980; National Highway Traffic Safety Administration, Office of Public Affairs.

National Crash Severity Study, DOT HS 805 227, February 1980; National Highway Traffic Safety Administration, Office of Public Affairs.

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Non-Use of Automobile Safety Belts in Civil Litigation, DOT HS 805 236, February 1980; National Highway Traffic Safety Administration, Office of Public Affairs.

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Marihuana, Other Drugs, and Their Relation to Highway Safety, DOT HS 805 229, February 1980; National Highway Traffic Safety Administration, Office of Public Affairs.

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Injuries in Air Transport Emergency Evacuations, FAA-AM-79-6, February 1979; Federal Aviation Administration, Office of Aviation Medicine, AAM-500.

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Effects of Load, Inflation Pressure and Tire Deflation Pressure, and Tire Deflection on Truck Tire Noise Levels, January 1979; National Highway Traffic Safety Administration, Publications Office, General Services Division, NAD-42.

Handbook on Financing Options for Diagnostic Inspection Programs, DOT HS 805 242, February 1980; National Highway Traffic Safety Administration, Office of Public Affairs.

Copies available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, at prices indicated, payable by check or money order to the Superintendent of Documents.

Development of Priority Accessible Networks, An Implementation Manual, Provisions for the Elderly and Handicapped Persons, S/N 050-001-00163-2, January 1980; $6.00.

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